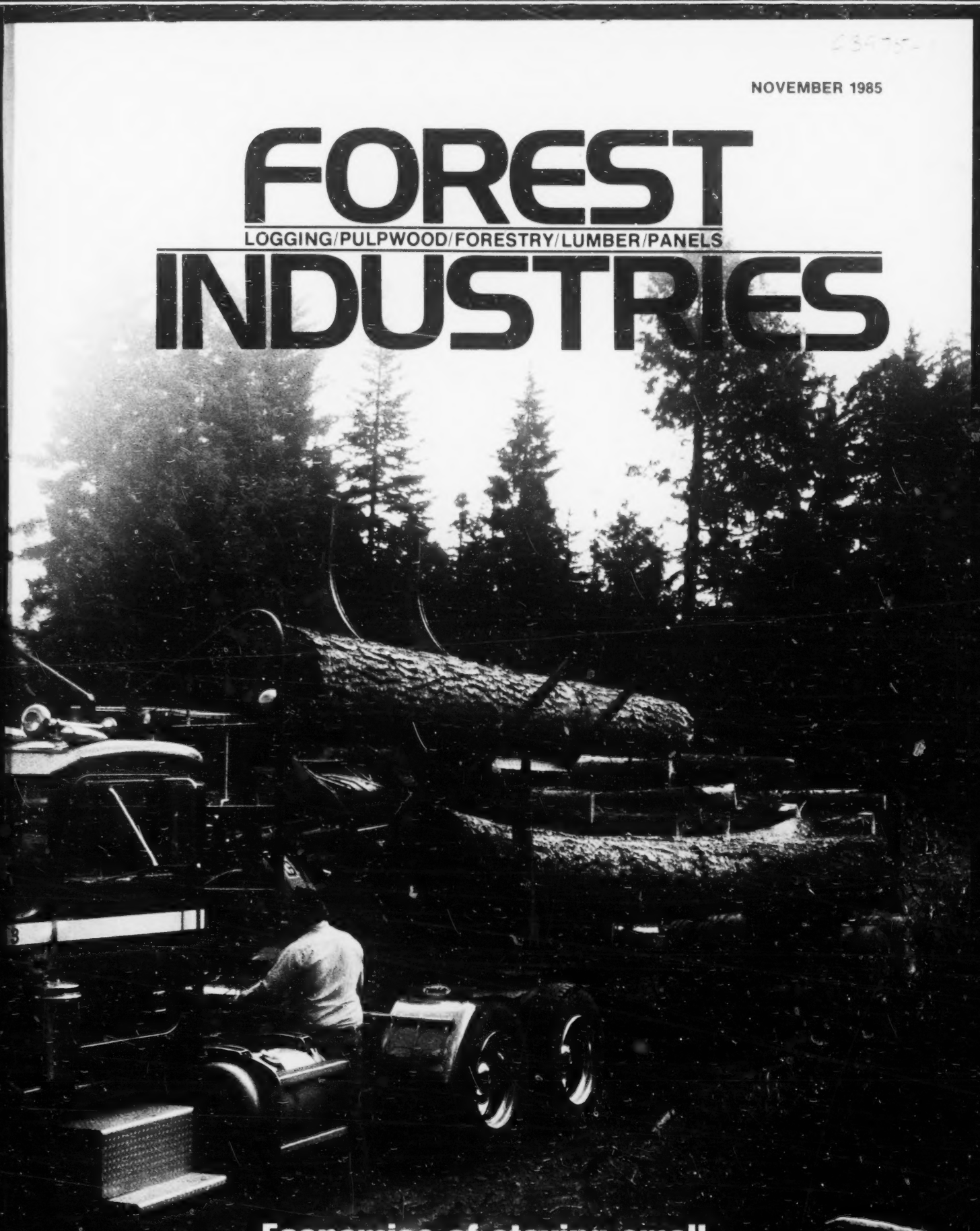
NOVEMBER 1985

FOREST INDUSTRIES

LOGGING/PULPWOOD/FORESTRY/LUMBER/PANELS



Economics of staying small pay off for veteran logger

1985 Volume 112 Number 11

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Woods

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Economics of staying small pay off for veteran logger
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Exch	Company	Ticker Symbol	Closing Price 9/16/85	Closing Price 10/15/85	Net Chg in Period	% Chg in Period	P/E Ratio	Annual Div Rate	Annual Div Yield	52 Week High	52 Week Low
OTC	Bohemia Inc.	BOHM	10.88	11.50	.62	5.70	d	.10	.87	12.50	9.63
NYS	Boise Cascade	BCC	45.25	42.25	-3.00	-6.63	18	1.90	4.50	51.00	37.00
NYS	Bowater Inc.	BOW	22.88	22.63	-.25	-1.09	8	.72	3.18	25.88	19.75
NYS	Champion Intl	CHA	22.13	21.00	-1.13	-5.11	11	.52	2.48	25.38	19.00
NYS	Chesapeake	CSK	36.25	34.75	-1.50	-4.14	10	1.24	3.57	39.50	32.00
OTC	Consol. Paper	CPER	47.00	49.00	2.00	4.26	11	1.48	3.02	54.63	25.13
NYS	Crown Zellerbach	ZB	37.38	38.00	.62	1.66	18	1.00	2.63	44.88	27.88
NYS	Fed. Paper Board	FBO	17.75	18.88	1.13	6.37	18	.70	3.71	25.00	16.63
NYS	Ft. Howard Paper (H)	FHP	76.75	83.38	6.63	8.64	18	1.84	2.21	83.38	56.50
NYS	Georgia-Pacific	GP	21.75	20.88	-.87	-4.00	27	.80	3.83	27.38	20.50
ASE	Glatfelter (P.H.)	GLT	32.50	35.00	2.50	7.69	11	.88	2.51	35.75	20.50
NYS	Gr. Northern Nek.	GNN	35.00	36.50	1.50	4.29	12	1.52	4.16	41.75	32.25
NYS	Hammermill	HML	41.00	40.75	-.25	-.61	14	1.36	3.34	42.88	26.88
NYS	Intl Paper (L)	IP	48.13	45.88	-2.25	-4.67	18	2.40	5.23	57.75	44.25
NYS	James River	JR	33.50	32.50	-1.00	-2.99	10	.56	1.72	37.00	23.75
OTC	Jefferson Smurfit	JJSC	21.75	19.00	-2.75	-12.64	8	.40	2.11	25.25	15.00
NYS	Kimberly-Clark	KMB	60.88	61.63	.75	1.23	11	2.32	3.76	63.88	43.25
NYS	Koppers Corp. (L)	KOP	17.13	15.75	-1.38	-8.06	d	.80	5.08	21.88	15.38
OTC	Longview Fibre	LFBR	22.88	24.00	1.12	4.90	17	1.28	5.33	25.75	20.25
NYS	Louisiana-Pacific	LPX	18.13	18.88	.75	4.14	41	.80	4.24	25.13	17.63
NYS	Mead Corp.	MEA	39.75	37.13	-2.62	-6.59	11	1.20	3.23	44.75	33.00
OTC	Mosinee Paper	MOSI	15.00	14.63	-.37	-2.47	9	.36	2.46	16.25	11.75
NYS	Pacific Lumber (H)	PL	28.13	40.00	11.87	42.20	25	1.20	3.00	41.13	24.50
OTC	Pentair Inc.	PNTA	27.00	27.00	0.00	0.00	9	.68	2.52	31.25	18.38
NYS	Pope & Talbot	POP	17.25	17.75	.50	2.90	d	.80	4.51	21.50	15.25
NYS	Potlatch Corp.	PCH	34.63	35.50	.87	2.51	14	1.56	4.39	38.13	28.00
NYS	Scott Paper Co.	SPP	42.00	42.13	.13	.31	10	1.24	2.94	44.50	29.75
OTC	Sonoco Products	SONO	27.00	28.00	1.00	3.70	14	0.00	0.00	29.50	18.75
NYS	Southwest Forest	SWF	12.50	12.38	-.12	-.96	d	0.00	0.00	17.88	11.13
NYS	Stone Container	STO	27.00	26.00	-1.00	-3.70	12	.60	2.31	34.63	24.00
NYS	Temple-Inland	TIN	36.00	37.00	1.00	2.78	9	.64	1.73	40.38	31.13
NYS	Union Camp	UCC	37.13	36.00	-1.13	-3.04	12	1.64	4.56	41.75	33.25
NYS	Westvaco Corp.	W	36.50	37.00	.50	1.37	10	1.32	3.57	41.75	34.88
NYS	Weyerhaeuser Co.	WY	27.00	26.88	-.12	-.44	22	1.30	4.84	34.00	26.00
OTC	Willamette Ind.	WMTT	43.00	45.50	2.50	5.81	9	1.65	3.63	46.25	29.75
Canadian Forest Products Companies											
TOR	Abitibi-Price	—	20.63	21.25	.62	3.01	17	—	—	21.00	9.38
TOR	BC Forest Prod.	—	9.75	9.50	-.25	-2.56	—	.13	1.37	12.50	8.36
TOR	Canfor Ltd.	—	8.13	8.50	.37	4.55	d	0.00	0.00	13.88	7.63
TOR	Consol.-Bathurst	—	16.75	16.00	-.75	-4.48	13	.60	3.75	19.00	14.00
TOR	Crestbrook	—	7.50	7.25	-.25	-3.33	55	.05	.69	9.75	6.25
TOR	Domtar Inc.	—	19.00	18.88	-.12	-.63	7	1.40	7.42	22.38	14.50
MON	Donohue Inc.	—	17.00	16.25	-.75	-4.41	6	.72	4.43	19.50	14.63
TOR	Great Lakes (L)	—	19.75	17.00	-2.75	-13.92	18	.40	2.35	24.00	15.50
TOR	MacMillan Bloedel (L)	—	19.75	18.25	-1.50	-7.59	—	—	—	29.75	17.75

Market Diary

Most Active Issues

Largest dollar gainer	Pacific Lumber	+$11.87
Largest dollar loser	Boise Cascade	-$3.00
Largest percentage gainer	Pacific Lumber	+42.20%
Largest percentage loser	Jefferson Smurfit	-12.64%

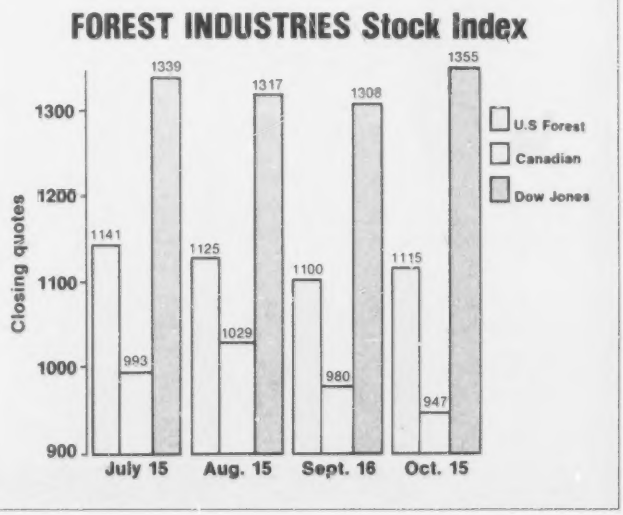
Advances, 19; Declines, 23; Unchanged, 2; New highs (H), 2; New lows (L), 4

Key
(H) = New High; (L) = New Low; (d) = Deficit
MON = Montreal; NYS = New York; ASE = American; OTC = Over the Counter; TOR = Toronto
All OTC quotes are represented as the bid price.
All Canadian quotes are in Canadian dollars.

	Close 9/16/85	Close 10/15/85	Net Chg in Pd	% Chg in Pd
Forest Industries Stock Index	1099.51	1115.49	15.98	1.45
Canadian Forestry Stock Index	980.11	946.66	-33.45	-3.41
Dow Jones Industrial Avg.	1307.68	1354.73	47.05	3.60
Standard & Poor's 500-Stock Index	182.91	186.37	3.46	1.89
Standard & Poor's 400 Industrials	204.05	207.94	3.89	1.91
NYSE Composite	105.85	107.64	1.79	1.69

Compiled by Nordby International Inc., Boulder, Colo. (303) 449-0326.

The information and statistics contained herein have been obtained from sources believed to be reliable, but are not guaranteed to be all-inclusive or complete. This is not to be construed as an offer or the solicitation of an offer to sell the securities herein mentioned. This information is subject to change without notice.



Output of the 4 billion bd ft treated lumber industry has grown while other forest sectors were fluctuating. Demand pull, smart marketing, good distribution are among reasons

Treated lumber: bright spot in wood economy

By Mel R. Walsh

BY ALL METHODS of measurement, the wood preservative industry is currently one of the most dynamic segments of the lumber industry in the United States.

This article provides an overview of that industry, using 10 points to describe the interrelationship of processing, distribution and market forces which have brought about the growth in treated lumber consumption.

First, it's important to define two key terms. *"Treated lumber,"* as used in this article, includes treated timbers and plywood as well as lumber. All are treated by a process known as *"pressure treating."* Preservative chemicals are forced into the wood inside a steel pressure chamber. The treatment prevents damage to the wood due to decay and insects for a minimum of 35 years, and probably much longer.

The 10 points are:

1. During the recent recession, treated lumber consumption increased 40% while total U.S. lumber use declined 30%.

Producing approximately 4 billion bd ft annually, the treated lumber industry is now the largest, and has been the fastest growing, segment of the entire pressure-treated wood industry, which also includes railroad ties, electric utility poles and piles (see Fig. 1).

It is significant to note that since 1977, about the time treated lumber sales began to take off, the market has grown from 1.5 billion bd ft to a 1984 level of between 3.5 to 3.9 billion bd ft—a growth rate of 12% to 14% per year (see Fig. 2).

Much of this rapid growth occurred from 1978 to 1982. That period saw total lumber consumption decline while treated lumber consumption grew.

Producing approximately 4 billion bd ft annually, the treated lumber industry is now the largest, and has been the fastest growing, segment of the entire pressure-treated wood industry

Treated lumber now accounts for about 8% of softwood lumber demand, versus less than 4% in 1977. In 1984, at least 25 to 30% of southern yellow pine lumber was treated.

2. Chromated copper arsenate (commonly known as CCA) is the most widely used lumber preservative.

About 95% of treated lumber is treated with CCA, a waterborne preservative composed of metallic salts. Most lumber treating plants consider CCA gives lumber the best available protection against rot or decay and insects, with few, if any, process problems. It requires less investment than other major preservatives, and is easier to handle.

Users report good durability. Test stakes have been in the ground for over 35 years without decay or termite damage. (Untreated stakes often last only three years in the ground.)

3. Almost three-quarters of pressure-treated lumber is produced in the South (see Fig. 3).

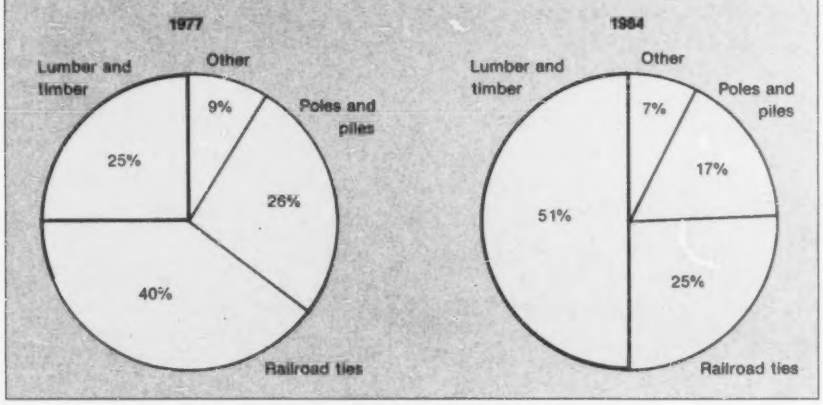
When southern yellow pine is well dried, its sapwood is easily penetrated by a wood preservative. It is abundantly available and offers good structural strength.

Pine from southern mills represents all the lumber treated in the South, the majority of that treated in the Northeast, and, along with ponderosa pine, most of the lumber treated in the Midwest.

The West primarily treats lumber made from its local species and species groups—Douglas fir and Hem-Fir. However, since these are relatively resistant to wood preservative penetration, they must be "incised" before treatment (passed through rollers equipped with teeth that sink into the wood, enabling acceptable wood preservative penetration).

Because the West is the source of decay-resistant species such as the increasingly scarce cedar and redwood, the

FIG. 1—Pressure-treating market changes



price gap between these and treated lumber is less than it is for the rest of the nation. As a result, treated lumber has not penetrated the West's residential remodeling market to the same extent it has in other regions.

However, treated lumber growth in the West is expected to occur faster than in other regions over the rest of the 1980s, as the price gap between treated lumber and decay-resistant species continues to widen.

4. Residential remodeling—primarily decks—is the dominant market for treated lumber.

Most treated lumber is used outdoors. Residential remodeling, the largest market, accounts for 40% of all treated lumber. It consists principally of decks, which with other outdoor uses—patios, porches, pool enclosures, balconies, etc.—represent close to 90% of retail treated wood sales for residential remodeling (see Fig. 4).

The next largest end use of treated lumber is new residential construction, mainly for the same outdoor uses mentioned above. But, in addition, contractors use treated lumber for sill plates, furring, wall studs, floor joists, permanent wood foundations, etc.

Between 7% and 10% of treated lumber is used on farms, largely in construction of pole barn buildings, fences and, on the West Coast, for grape stakes.

The nearly 10% used in non-residential construction is divided between projects such as marinas and bridges and building uses such as fire-treated lumber for commercial and institutional building interiors and regular treated lumber for exteriors and outdoor projects.

The "other" category of just under 10% includes government use such as highway guard rail posts, industrial use such as playground equipment, manufactured housing and fabricated parts, plus some application as mine timbers in the Northeast.

5. The product quality story of pressure-treated lumber has reached the mass market.

The wood preservative and pressure-treating industries, via the American Wood Preservers Assn. (AWPA), have set rigid product quality standards. A rigorous treating plant inspection program is carried out through the American Wood Preservers Bureau (AWPB) to insure compliance.

This inspection and related test program is extremely important. All CCA-treated wood has a green cast, but the retailer or consumer cannot use this as proof of proper treatment. The only way to be sure a piece of pressure-treated lumber meets standards is to subject samples to a laboratory analysis. This part of the program is also administered by the AWPB.

A second and extremely important factor in developing market acceptance of treated lumber has been the sizeable marketing effort carried out over the years by wood preservative suppliers, most notably Koppers Co. and Osmose Wood Preserving Co.

These companies have supplied their pressure-treating customers—mainly licensees—with a wide range of marketing services and materials. This has included extensive cooperative advertising with retailers, and very strong point of purchase programs and collateral materials.

An effective marketing tool has been the "warranty end-tag," stapled to the end of each piece of treated lumber where it can be seen by consumers.

6. Rapid expansion of home centers over the past decade has boosted acceptance of treated lumber.

Retailers at home centers increasingly have identified and promoted treated lumber as one of their most profitable lines. At some home centers, it accounts for one-quarter to one-third of lumber sales.

Today, close to 90% of all treated lumber flows through distribution. The remainder, slightly over 10%, that moves from treating plants directly to the market primarily goes to local contractors and farmers or to government and industry. Most wholesaler volume (about three-quarters) goes on to the retailer. This leaves the retailer accounting for over 80% of the sales of all treated lumber to end users. Contractors account for most of the one-quarter of wholesaler sales not going to retailers.

Retailers sell almost one-half of their treated lumber directly to consumers, and over 40% is sold to home improvement, residential and non-residential contractors. The majority of contractor purchases are from retailers. (Readers who wish to have a detailed flow chart tracking treated lumber from treater to end use can get a copy from the author at the address given on p. 38.)

7. The consumer has emerged as the dominant buying force, affecting the market both directly and indirectly.

Strong consumer acceptance of treated lumber has made this industry a profitable and large growth industry.

Consumers use 40% of all the treated lumber sold, representing fully 50% of the treated lumber sold by retailers.

However, even this sizeable amount probably understates the full consumer influence on the industry. For example, much of the contractor use of treated lumber is directed to outdoor projects, such as decks, similar to projects the consumer builds.

8. Two-inch dimension lumber plus 4-in. and larger timbers comprise over 80% of all treated lumber sales. This is one of several distribution and production factors involved in the market for treated lumber products.

The treated lumber product mix is fairly consistent throughout all regions of the U.S. (see Table 1).

The dominance of 2-in. dimension lumber and timbers is, of course, related to its heavy use in residential remodeling projects such as decks.

Fencing is the primary use of 1-in. boards.

FIG. 2—Treated lumber growth trend

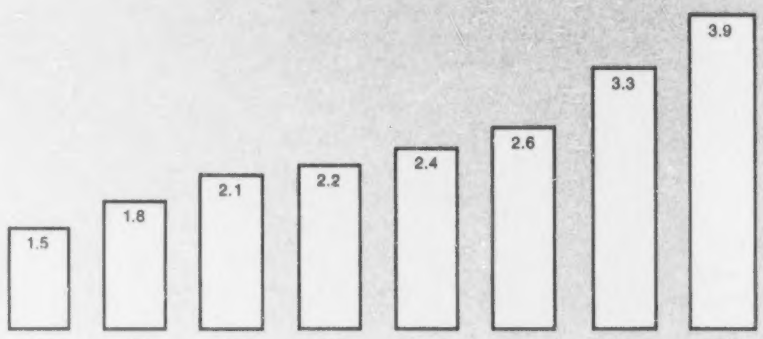
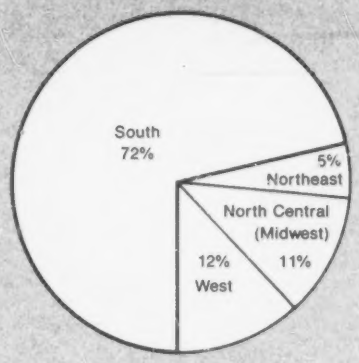


TABLE 1—Treater shipments by product type

Product type	Percent of total shipment
2-in. dimension	55
1-in. boards	9
4-in. and larger	22
Landscape timbers	6
Permanent Wood Foundation	2
Fire-retardant	4
Other plywood	2
TOTAL	**100**

FIG. 3—Location of pressure-treating activity



Use of fire-treated lumber to date has been related primarily to commercial and institutional interior building construction.

Popularity of the Permanent Wood Foundation (PWF) is growing, but it still represents a relatively small part of treated lumber sales.

No. 2. is the dominant lumber grade, used for over 80% of all treated lumber. Some No. 1. is used, mainly by those desiring a better-looking deck.

A declining 25% of treated lumber is treated for above-ground use at the .25 retention level. (Retention is measured in pounds of wood preservative contained in each square foot of wood after treatment, thus a .25 retention level means one-quarter pound of preservative for every cubic foot of wood. See Fig. 5.)

On the other hand, a growing 55% is treated to .40, which is the ground contact standard. A number of retailers and wholesalers stock only .40 treated lumber, thereby eliminating the need to carry two inventories (.25 and .40).

Some treaters who use the Koppers Wolmanized system treat lumber to a .30 retention level in an attempt to provide themselves and their distribution customers with a single inventory. Because .30 is not approved by the AWPA for ground contact, it has not become a single inventory line for many retailers.

Kiln Dried After Treatment (KDAT) for a small up-charge enhances the appearance of treated lumber and reduces its weight for transport. About 20% of treated lumber is KDAT, and about 40% of the treating plants perform this service on at least some of their production.

About 85% to 90% of the treating plants engage in Treating Service Only (TSO) to some extent. This service involves a treater who will treat lumber owned by another—usually a wholesaler or retailer—for a fee.

Perhaps 20% to 30% of all treated lumber is produced on a TSO basis.

Georgia-Pacific Corp. is probably the largest marketer of treated lumber in the U.S. The company does not treat lumber, but obtains most of its treated lumber from TSO suppliers.

9. Most treating plants are aggressive small or medium-sized businesses.

Approximately 80% of an estimated 400 lumber treating plants have sales below $8 million. Most are in the South and about half are independent businesses. Another 20% are part of a treating plant chain, most of these with two locations. A few have up to five locations.

About 15% of the treating plants are either part of an integrated forest products company, or are an offshoot of a sawmill. Some treating plants are also affiliated with wholesalers and retailers. Over half of all lumber treaters are licensees of Koppers Co. or Osmose Wood Preserving Co.

10. Strong, steady growth of the treated lumber industry is anticipated.

In 1978 on a constant dollar basis (1972 dollars), one-third of a board foot of treated lumber was used for every dollar that was spent for residential remodeling.

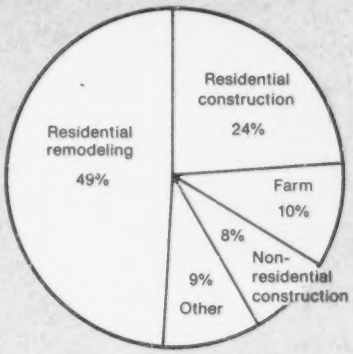
From 1978 to 1981, this rose 20% per year to almost three-fifths of a board foot. From 1981 to 1984 this market penetration ratio slowed its rate of increase to between 5% and 10% per year.

From 1984 to 1987, the ratio is expected to increase between 3% to 5% per year. Actual footage growth should be greater since the market itself is growing.

Total demand for treated lumber on a footage basis from 1984 to 1987 is forecast to be at least 4% per year—exceeding growth estimates for the national economy.

However, this estimate may be conservative. The AWPB, whose figures include about two-thirds of the industry's volume, reports that as of the first eight months of 1985, treated lumber volume was up 24% over the same period last year—largely due to an extremely strong summer sales surge.

FIG. 4—Markets for treated lumber



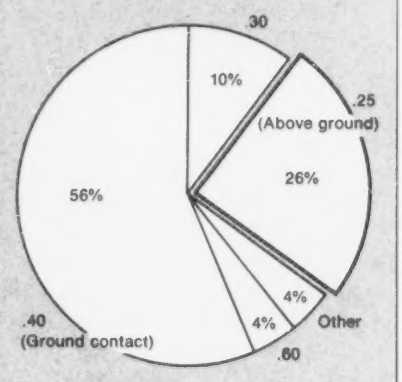
One factor supporting continued strong demand for treated lumber is the increasing movement of treaters into specialty product and market niches—Permanent Wood Foundations, fire-treated lumber, specially machined and sized dimension lumber for decks, the addition of weathering agents to wood preservatives, more attractive deck and other outdoor project designs, deck kits, etc. And, even though color tints have been around a long time, more are in evidence.

There is at least one factor which clouds the future. Negotiations are currently underway between the industry and the Environmental Protection Agency in respect to the future use of CCA. It is important to the wood treating industry that these be worked out without the imposition of significant restrictions.

Although there is no clear alternative to CCA today, that may change. Chemical companies relatively new to this industry are contemplating new wood preservative products.

These new products promise effectiveness similar to or better than CCA, with lower toxicity and more environmental safety. ■

FIG. 5—Treated lumber retention levels



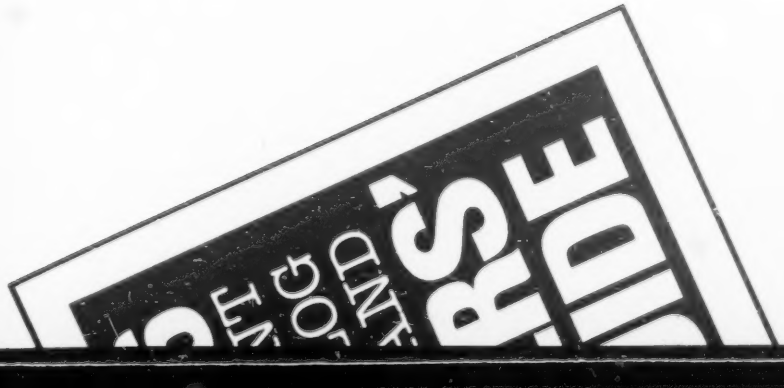
THE AUTHOR is president of M. R. Walsh Consultants, a marketing-oriented management research firm located at 2805 Butterfield Rd., Oak Brook, Ill. 60521. This article has been drawn from several of Walsh's wood preservative marketing investigations, including "Treated Wood Study," an in-depth analysis which was a cooperative effort between Walsh and Bernard Fuller, vice president of Resource Information Systems Inc., Bedford, Mass., a forest products forecasting and economics service.

DECEMBER 1985

FOREST INDUSTRIES

LOGGING/PULPWOOD/FORESTRY/LUMBER/PANELS

1986 EQUIPMENT CATALOG AND BUYERS' GUIDE



1985 Volume 112 Number 12

DECEMBER

Special Issue

25
Equipment Catalog features new products for the industry

Products from leading suppliers are illustrated and described in this catalog. Equipment for both harvesting and processing operations is included

40
FOREST INDUSTRIES' Suppliers' Showcase

This special section promotes a range of product literature available free of charge from industry suppliers

50
1986 Buyers' Guide: a classified directory of products and services

This classified directory lists manufacturers of harvesting and processing equipment under a wide variety of category headings

69
Alphabetical listing of industry suppliers

For easy reference, the companies featured in the Buyers' Guide and Equipment Catalog are listed in alphabetical order with addresses and telephone numbers

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Too much paper, wood hurts industry profits

SAN FRANCISCO, CALIF.—Mills in the U.S. and Canada turned out too much lumber, plywood, pulp and paper again during the third quarter. That probably was good news for most consumers, but certainly was bad news for forest products companies.

Industry profits were weak again in the third quarter (see table). Most companies blamed their problems on weak pulp and paper markets combined with an oversupply of wood products. Lumber producers were most strident in blaming imports for many of their profit problems, but pulp producers also said imports hurt them.

Everyone blamed the U.S. dollar's strength, since that is a major reason why imports have been selling so well. ■

U.S. forest industry results

	Third quarter ($000)			
Companies	**Sales**	**Change 1985/84**	**Earnings[1]**	**Change 1985/84**
Boise Cascade	$934,230	−3.0%	$20,330[2]	−37.9%
Champion Intl.	1,330,43[2]	17.6	37,940	−5.7
Chesapeake Corp.	161,911[3]	39.8	3,422[3]	−57.0
Crown Zellerbach	788,200	−2.6	(84,600)[4]	n.m.
Georgia-Pacific	1,752,000	−0.4	58,000[5]	−28.4
GN Nekoosa	475,300	0.7	9,600	−68.5
Hammermill Paper	416,950	−0.2	5,631	−25.7
International Paper	1,100,000	−8.3	15,200[6]	−78.8
James River (7/28)	629,862	0.7	23,727[7]	6.0
Kimberly-Clark	1,015,400	12.2	62,300	18.2
Longview (7/31)	110,445	−13.3	3,795	−52.2
Louisiana-Pacific	332,400	6.3	11,400	62.9
Mead Corp.	709,500	0.2	23,600	−51.0
Pacific Lumber	65,543	−6.5	9,428	−16.8
Pope & Talbot	81,952	−0.6	2,017	n.m.
Potlatch Corp.	239,643	−3.8	11,270	0.9
Scott Paper	765,600	9.5	56,300	12.6
Southwest Forest	181,599	−10.6	(2,842)	n.m.
Stone Container	304,342	−4.4	(5,979)	n.m.
Temple-Inland	311,000	−4.0	17,500	−36.1
Union Camp	463,771	−6.8	20,150	−59.2
Westvaco	419,115	−6.0	23,166	−43.3
Weyerhaeuser	1,291,761	−33.8	38,607	−33.8
Willamette	287,210	−2.8	14,760	−27.8
Total	**15,487,435**	**0.5**	**474,030**	**−43.7**

1. Income after taxes from continuing operations, excluding most significant items in both years.
2. Includes pretax gain of $6.7 million from sale of building materials distribution unit, offset by $6-million charge related to employee separation.
3. Includes results of Wisconsin Tissue Mills and Plainwell Paper acquired July 1, 1985.
4. Loss includes aftertax charge of $106.2 million from restructuring.
5. Latest quarter is before loss of $39 million from disposal of discontinued oil and gas unit; year-earlier quarter includes $19-million pretax gain from sale of office building.
6. Latest quarter includes pretax charge of $290 million for early retirement and staff cuts.
7. Adoption of LIFO accounting increased 1985 quarter income by $4.2 million. n.m.=Not meaningful.

Supreme Court lets timber ruling stand

WASHINGTON, D.C.—Federal timber sales contracts can be enforced even if economic conditions change between time of purchase and harvest. In refusing to hear an appeal, the U.S. Supreme Court affirmed a court decision that supported enforcement of the contracts.

The decision came a month after suing timber buyers and the Forest Service tentatively agreed to settle the case. In return for dropping the case and agreeing not to sue again on the same grounds, the government agreed to give the companies four more years to cut the trees they bought.

The case, started by North Side Lumber Co. of Philomath, Ore., was joined by 111 other Northwest timber buyers. The suit stemmed from timber sales in the late 1970s and early 1980s, when speculation and inflation drove up timber prices. When markets collapsed, the companies argued they could not afford to pay the prices they had bid earlier. ■

Maxxam claims control of Pacific Lumber Co.

SAN FRANCISCO, CALIF.—Maxxam Group Inc. said owners of 60% of The Pacific Lumber Co.'s shares have agreed to sell them. This would give Maxxam control of the company and eliminate a threatened legal battle over the buyout bid.

Charles Hurwitz of Houston, Texas, heads Maxxam, which offered to pay $40 a share—$870 million—for Pacific. Palco directors accepted the offer, but dissident shareholders challenged the takeover. The shareholders asserted that the company's long-term worth far exceeds $40 a share.

A Superior Court judge in Eureka, Calif., ordered a delay in the tender offer's deadline.

But only three days later, on Nov. 11, Maxxam announced that owners of 13.1 million Palco shares had agreed to sell. Maxxam intends to buy all remaining Pacific Lumber shares.

Pacific Lumber president Gene Elam said that company directors did everything possible to provide the most value for all shareholders and to protect employees' interests. Maxxam agreed to wait at least three years before reducing any employee benefits, for example.

Among the interests protected were those of six executives. Directors hiked their severance pay before accepting the Maxxam offer. If all six lost their jobs, they would receive a combined $1.67 million in severance pay. ■

Weyco holders okay two defense measures

TACOMA, WASH.—Anyone who wants to take over Weyerhaeuser Co. will find the going tougher, thanks to two measures stockholders approved in October. One makes it harder to remove company directors; the second makes it harder to change corporate policies.

The first change creates three-year staggered terms for directors. Replacing a director who quits or is removed requires approval of remaining directors. A special shareholder meeting can be called only if directors vote to do so, instead of letting shareowners call a meeting.

The second amendment takes effect only if someone buys at least 10% of Weyerhaeuser stock. If this happens, every major corporate decision requires either approval by a majority of directors who were seated before the investor bought more than 10%, or 80% approval from shareowners. ■

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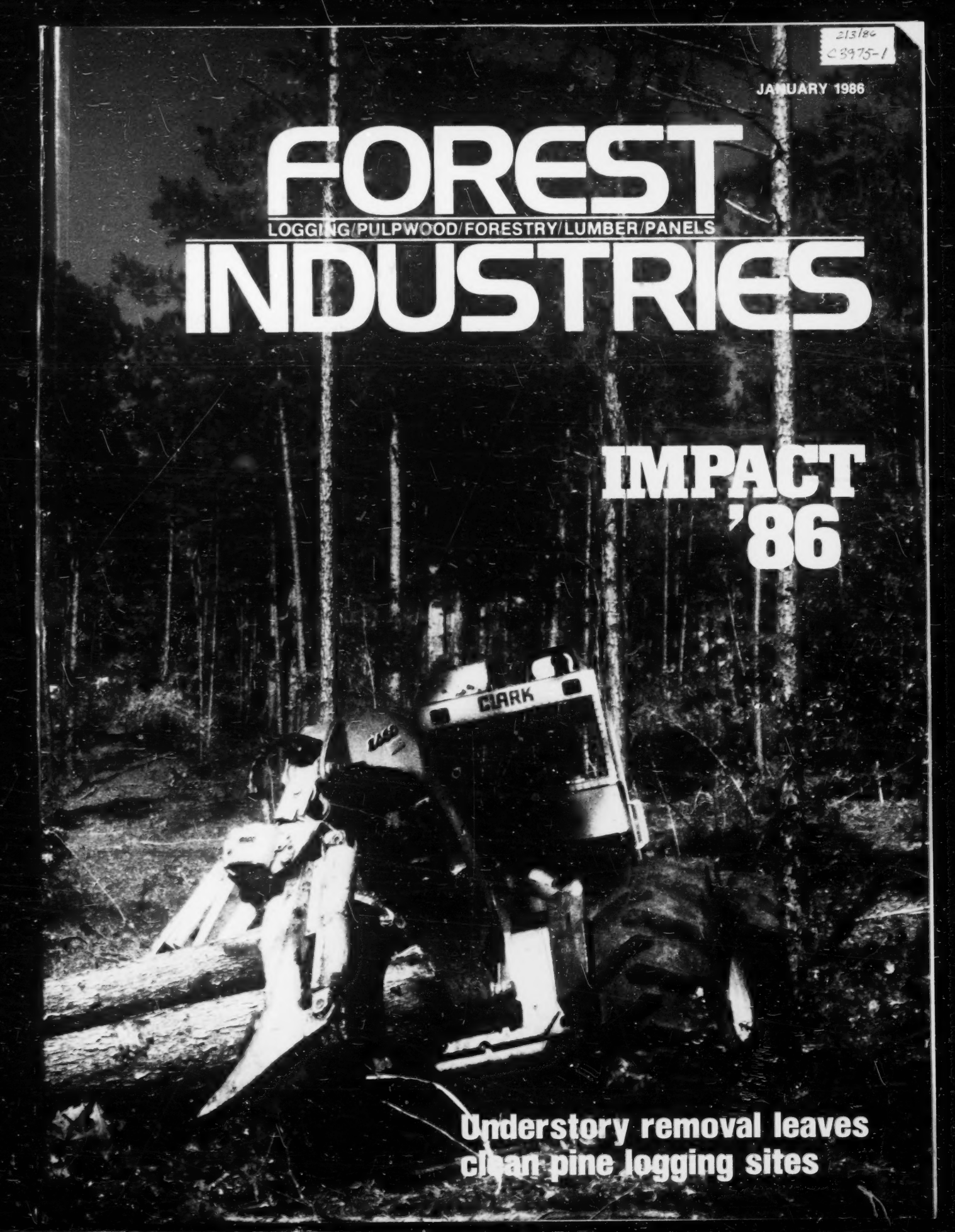
FOREST INDUSTRIES

LOGGING/PULPWOOD/FORESTRY/LUMBER/PANELS

IMPACT '86



Understory removal leaves clean pine logging sites

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Analysts' projections for 1986

(Percentage change from '85 levels, except as indicated)

	Growth in real GNP (%)	U.S. Production Lumber	U.S. Production Structural panel	Lumber/panel prices	Operating profits Paper	Operating profits Forest products	Housing starts[1]
George Adler Smith Barney	+2.0	n.e.[2]	n.e.	n.e.	+25-40	+40	1.7
Bruce Kirk Goldman Sachs	+3.4	-1.6	-2.2	n.e.	+39	+45	2.0
Evadna Lynn Merrill Lynch	+2.9	+8.0	+1.8	+2.0	+14.4	+23.3	1.78
Mark Rogers Dean Witter	+3.5	+9	+5	+5	+48	+34	1.8
Lawrence Ross PaineWebber	+3.2	+3-5	+4-5	+5-10	+20-30	+25-35	1.8
Bowen Smith Salomon Bros.	+3.0	-1.5	0	+2-3	+15	+5	1.7-1.75
William Wigder First Boston	+2.0-3.0	n.e.	n.e.	+4	+15	+30-75	1.75
Average	**+2.9**	**+3.6**	**+1.8**	**+4.2**	**+27.7**	**+33.2**	**1.8**

[1]millions of units; [2]n.e. = no estimate.

Seven analysts looking ahead *at 1986's economy, seven crystal balls. But this time, they seem to be pretty well in focus on the major issues which will affect the wood products industry in 1986. All expect moderate economic growth and continued strength in housing. More information about how the U.S. economy shapes up in 1986 is on pp. 22-23.*

Maxxam gets Palco; Potlatch saves itself

SAN FRANCISCO, CALIF.—Attempted takeovers of two San Francisco-based forest products companies produced opposite results in November. Potlatch Corp. staved off a Canadian bid by paying nearly $48 million to its would-be buyers.

But after a brief battle of the judges, Maxxam Group Inc. got a judicial go-ahead to buy all of The Pacific Lumber Co.'s shares. Maxxam, headed by financier Charles Hurwitz, will pay $40 each for the 21.8 million shares.

In early December, Maxxam said it had bought 60% of the shares. Maxxam will get $475 million from Drexel Burnham Lambert Inc. and the Irving Trust Co. to help finance the stock purchase. The remaining $49 million needed to buy the first block of 13.1 million Palco shares will come from Maxxam's own funds. Maxxam already owned 4.5% of Palco, and plans to buy all of the rest.

Three shareholders apparently have not given up their attempt to keep Pacific Lumber independent. The dissidents, grandchildren of a former Palco chairman, filed suit in Maine to block the takeover. Pacific Lumber is incorporated in Maine, though its headquarters is in San Francisco.

The dissidents charged that Pacific Lumber directors acted improperly when they approved the merger with Maxxam. Maxxam and Pacific Lumber said they plan a "vigorous" defense against the suit and any other actions which seek to block the merger.

Potlatch paid the Belzberg family of Vancouver, B.C., $43 a share for their 7.1% stake in the company. The Belzbergs agreed not to deal in Potlatch stock or participate in any takeover bid for five years in return for their $8.7-million profit on the deal.

Other mergers and acquisitions in the industry include:

• Jefferson Smurfit Corp. will buy 80% of Publishers Paper Co., Times Mirror Co.'s newsprint and wood products producer. The $150-million price does not include Times Mirror's 272,000 acres of timberland or most of its long-term government timber-cutting contracts. Times Mirror will keep the remaining 20% of Publishers Paper, which operates four sawmills, two particleboard plants, two newsprint mills and 12 wastepaper reclamation plants. Most of its facilities are in Oregon.

• To try to protect its independence, Times Mirror plans to reincorporate in Delaware, then enact a series of anti-takeover measures. These include changes in bylaws and board structure to make a buyout harder. Stockholders will vote on the proposed changes Feb. 12. Last summer, Times Mirror bought 7.5 million of its shares; insiders own about 40% of the stock.

• Pope & Talbot Inc. shareholders have approved a plan to transfer some of P&T's timberland and development property to a limited partnership. P&T shareholders of record Dec. 12 will receive one partnership unit for each five shares of common stock. The partnership will pay P&T $25.9 million for the assets.

• ITT Rayonier sold out the initial offering of units of Rayonier Timberlands limited partnership in one week in November. The sale of 5.06 million units—25% of the total number of units—raises about $94 million for the company and its parent, ITT Corp. The partnership holds 1.2 million acres of ITT Rayonier timberland in Washington and the Southeast.

• Georgia-Pacific Corp. has won a $10-million judgment in a 10-year-old suit against the U.S. Army Corps of Engineers. G-P claimed the Corps had not paid enough for 9300 acres in southwestern West Virginia which the agency

Results of FI's capital spending survey: Mill projects starting up in 1985-87 exceed $1 billion value. Panels claim 63% of total, but lumber manufacturers are busy

Wood industry spending concentrates on panels

By David A. Pease

San Francisco, California

It seems that someone is always taking the pulse of the North American solid-wood products industry, still undergoing a wobbly recovery after it was mashed flat five years ago by high mortgage interest rates.

We are no more immune to this thrall than are the legions of economists and analysts upon whose words we dote, so the staff agreed a "first annual" survey of capital spending projects would be a desirable component of this January 1986 review-and-outlook issue. The results are summarized in the accompanying tables, followed on the next two pages by a list of projects.

Reported capital spending projects in the United States and Canada, with startup dates ranging from 1985 through 1987, are valued at an estimated $1,029,400,000. (Except where noted otherwise, Canadian figures have been converted to U.S. dollars at a rate of 0.73:1.)

By far the biggest share of the survey total is represented by the ongoing surge of waferboard and oriented strand board (OSB) plant construction and expansion, worth an estimated $422.5 million. Add new medium-density fiberboard (MDF) plant construction and reconstruction, valued at $184.2 million, and a cluster of plywood and particleboard plant remodeling projects, at $40.5 million and $17.8 million, respectively, and the value assigned to panel projects climbs to $647.2 million. This is 63% of the survey total.

True to its current star billing, the South accounted for $578.2 million worth of capital projects, 56% of the total. Projects earmarked for western states came in next at $204 million, 20% of the total. Canadian projects, at $93.7 million, represent 9% of the survey total.

The survey turned up 127 projects

Reported capital spending projects, North American solid-wood industry, 1985-87, by product and start-up year (millions of US$)

	1985	1986	1987	Total
UNITED STATES				
Lumber	**98.5**	**43.4**	**5.6**	**147.5**
New mills	74.5	35.0	—	109.5
Modernization	24.0	8.4	5.6	38.0
Plywood[1]	**31.5**	**8.0**	**1.0**	**40.5**
Waferboard/OSB	**222.5**	**120.0**	**80.0**	**422.5**
New mills	180.0	120.0	80.0	380.0
Modernization	42.5	—	—	42.5
Particleboard[1]	**5.3**	**12.5**	**—**	**17.8**
Fiberboard	**70.0**	**55.0**	**30.0**	**155.0**
New mills	60.0	35.0	30.0	125.0
Modernization	10.0	20.0	—	30.0
LVL[2]	**10.0**	**33.0**	**—**	**43.0**
Energy[2]	**28.2**	**80.6**	**—**	**108.8**
Other	**0.6**	**—**	**—**	**0.6**
TOTAL U.S.	**466.6**	**352.5**	**116.6**	**935.7**
CANADA (in US$)				
Lumber	**48.5**	**8.7**	**4.2**	**61.4**
New mills	27.7	—	—	27.7
Modernization	20.8	8.7	4.2	33.7
Fiberboard[2]	**—**	**29.2**	**—**	**29.2**
Other	**—**	**3.1**	**—**	**3.1**
TOTAL CANADA	**48.5**	**41.0**	**4.2**	**93.7**
TOTAL NORTH AMERICA	**515.1**	**393.5**	**120.8**	**1029.4**

[1] Modernization only; [2] New plants only.

scheduled for completion over the three-year period. Here's how it was undertaken:

While FOREST INDUSTRIES in the past has published capital project reports based entirely on previously-published news items (the last was in the January 1983 issue), the figures on these pages represent our first attempt at a much more thorough approach to the generation of information.

Questionnaires requesting participation in the survey were mailed to some 300 corporations in the U.S. and Canada, followed by a second mailing to those who didn't reply. As there are some companies who as a matter of policy or sloth (one suspects the former) wouldn't answer 32 bars of reveille from Gabriel's B-flat cornet, the staff cross-checked against annual reports, news releases, supplier information and other evidence vacuumed from our files.

Thus the information in these tables has evolved from a foundation of fact rather than speculation, although the dollar totals represent a mixture of reported figures and our own estimates, to a ratio of about 3:1 in favor of the former. We are convinced any errors are those of omission, i.e., projects on the drawing boards about which the owners are keeping mum.

Some companies responding, large and small, were exceptionally candid and thorough in outlining their capital spending programs in detail, and we are appropriately thankful. We didn't list line-by-line cost figures so as not to put anyone on the spot.

Tables of figures don't tell all, of course, so let us examine some of the information which has fallen out of this statistical project, by industry segment. First, lumber.

The survey shows 10 new sawmills being built by an equal number of companies: eight in the U.S., with annual capacity totaling 403 million bd ft; and two in Canada, with annual capacity of 150 million bd ft. Eight of these—the two in British Columbia and six in the U.S.—came on line in 1985. Two are hardwood mills, the balance softwood. Among softwood lumber producers, emphasis is not so much on adding capacity as it is to provide new and more efficient facilities to replace obsolete mills.

Thus there is also a substantial commitment to remodeling, particularly in the West. The survey turned up 32 such projects by 16 companies in the U.S., and 30 projects by 17 companies in Canada. Here's a shopping list gleaned from returned questionnaires: 27 edgers and circular gangs, 19 dry kilns, 12 sorters (green and dry), 10 edger optimizers, eight headrigs (band and canter), eight trimmer optimizers, seven chippers, six canter conversions, six resaws, five debarkers, five trimmers, four planers, three carriages, two stud lines and one sash gang.

Panels as a category account for fewer projects but a much higher expenditure. Most of the new OSB, waferboard and MDF plants and expansions have been well-publicized. The survey lists 15 new wood-based panel plants started up in 1985 or currently scheduled for completion through 1987 by six corporations. Of that total, 14 plants are in the U.S. and one is in Canada; 10 are waferboard or OSB and five are MDF. Plus which there are 10 modernization and expansion projects by eight companies, including five which involve substantial expenditures.

Reported capital spending projects, North American solid-wood industry, 1985-87, by state/province and region (millions of US$)

	Lumber	Plywood	Board	Other	Total
Alabama	26.7	—	—	—	26.7
Arkansas	3.5	—	—	—	3.5
Florida	0.4	—	—	10.0	10.4
Georgia	30.1	0.4	—	—	30.5
Louisiana	1.9	6.7	72.0	13.0	93.6
Mississippi	0.6	—	40.0	0.5	41.1
N. Caroiina	2.0	—	100.0	10.0	112.0
S. Carolina	0.4	—	—	—	0.4
Texas	30.0	5.0	115.0	—	150.0
Virginia	—	—	110.0	—	110.0
SOUTH	**95.6**	**12.1**	**437.0**	**33.5**	**578.2**
California	22.5	—	30.0	63.0	115.5
Idaho	1.0	—	—	10.2	11.2
Montana	0.6	—	—	—	0.6
Oregon	12.6	20.3	6.8	15.7	55.4
Washington	13.0	8.1	—	—	21.1
Wyoming	0.2	—	—	—	0.2
W. COAST	**49.9**	**28.4**	**36.8**	**88.9**	**204.0**
Indiana	2.0	—	—	—	2.0
Michigan	—	—	30.0	—	30.0
Minnesota	—	—	30.0	—	30.0
Wisconsin	—	—	20.0	—	20.0
N. CENTRAL	**2.0**	**—**	**80.0**	**—**	**82.0**
Maine	—	—	21.5	30.0	51.5
New York	—	—	20.0	—	20.0
NORTHEAST	**—**	**—**	**41.5**	**30.0**	**71.5**
Alberta	2.5	—	29.2	—	31.7
B.C.	37.7	—	—	3.1	40.8
W. CANADA	**40.2**	**—**	**29.2**	**3.1**	**72.5**
N.B.	6.0	—	—	—	6.0
Ontario	1.1	—	—	—	1.1
Quebec	14.1	—	—	—	14.1
E. CANADA	**21.2**	**—**	**—**	**—**	**21.2**
					1029.4

The survey shows an addition of 1.68 billion ft² to U.S. waferboard/OSB annual capacity through new plants coming on line through the three-year survey period: 782 million ft² in 1985; 505 million ft² in 1986; and 390 million ft² in 1987 (all ⅜-in. basis). These figures do not include plant expansions.

New MDF plants in the U.S. and Canada should add 330 million ft² (¾-in. basis) in annual capacity over the three-year survey period, with more coming from reconstruction and modernization projects.

Responses of plywood manufacturers fell exclusively into the plant remodeling category. No new plywood plants turned up; however, 16 modernization projects by six companies focused on log processing, green end, veneer drying and layup improvements.

Ten of these projects are in the West and six are in the South.

The survey lists eight electricity generating plants valued at $108.8 million. Five are mill-based cogeneration facilities, one is a non-mill, wood-fueled power plant and two will generate electricity only for sawmill purposes.

Four laminated veneer lumber plants contributed an estimated $43 million to the survey total.

The big spenders in this survey are just about who you would expect. With 49% of the survey cost total represented by new panel plants, it is logical that the corporations most prominent in the race to add capacity are contributing most to the solid-wood industry's total capital investment.

Louisiana-Pacific Corp., over the three-year survey period, is starting up four new waferboard plants, four new MDF plants, two major waferboard plant expansions and a new sawmill. Based on costs of similar projects, we have estimated the total value of these projects at $325 million.

Georgia-Pacific Corp. falls next in step with three OSB plants and one waferboard plant remodeling project, estimated at $121.5 million.

We can identify only two Weyerhaeuser Co. projects for the period, but one of them – a huge, $50-million OSB plant at Elkin, N.C., which is due for completion in 1986 – contributes a ma-

LUMBER

New sawmills, U.S.

Company, mill location	Annual Capacity (bd ft)	Startup
Anthony Forest Products Co., Urbana, Ark.	20	1985
C. H. Best & Son, Floyds Knobs, Ind.	4	1985
M. C. Dixon Lumber Co., Eufaula, Ala.	75	1985
ITT Rayonier, Baxley, Ga.	75	1985
Louisiana-Pacific Corp., Standard, Calif.	70	1985
J. P. Smith Lumber Co., Menlo, Ga.	9	1985
Seneca Sawmill Co., Eugene, Ore., stud mill	25	1986
Temple-Eastex Inc., Evadale, Texas	125	1986

New sawmills, Canada

B.C. Forest Products Ltd., Vancouver, B.C.	135	1985
MacMillan Bloedel Ltd., Chemainus, B.C.	110	1985

Plant modernization projects, U.S.

Company, mill location	Startup
Olon Belcher Lumber Co., Brent, Ala., headrig, carriage, kiln	1985
Boise Cascade Corp., Council, Idaho, resaw	1985
Boise Cascade Corp., Kettle Falls, Wash., sorter	1985
Boise Cascade Corp., White City, Ore., planing mill	1985
Boise Cascade Corp., Yakima, Wash., planer, trimmer, sorters, stacker	1985
Cambria Forest Industries Inc., Newcastle, Wyoming, sash gang	1985
Crane Mills, Paskenta, Calif., kiln, edger, optimizer	1985
Ellingson Lumber Co., Baker, Ore., twin band, edger, sorter, setworks	1985
Gilman Paper Co., Blackshear, Ga., chipping headrig, edger conversions	1985
Gilman Paper Co., Fitzgerald, Ga., chipping headrig, edger conversions, new and rebuilt kilns, lug loader	1985
Gilman Paper Co., Manville, Fla., chipping headrig, edger conversions, kiln rebuild, debarker, stacker	1985
Gulf Lumber Co., Mobile, Ala., sharp chain headrig, gangs, edger, sheds, kiln controls, shavings system	1985
Charles Ingram Lumber Co., Effingham, S.C., trimmer, optimizer	1985
Kitchens Bros. Mfg. Co., Hazlehurst, Miss., four kilns	1985
Roy O. Martin Lumber Co., Castor, La., edger optimizer, chipper	1985
Roy O. Martin Lumber Co., Lemoyen, La., eight kilns	1985
Paul Bunyan Lumber Co., Anderson, Calif., edger, optimizer	1985
Seattle-Snohomish Mill Co., Snohomish, Wash., green chain, timber sorting facility, packaging station	1985
Shuqualak Lumber Co., Shuqualak, Miss., planer	1985
F. H. Stoltze Land & Lumber Co., Columbia Falls, Mont., quad band, feedworks, log deck, cutoff saw, debarker	1985
F. H. Stoltze Land & Lumber Co., Dillon, Mont., kiln	1985
Weyerhaeuser Co., Plymouth, N.C., expansion, automation	1985
Olon Belcher Lumber Co., Brent, Ala., pressure treating plant	1986
Boise Cascade Corp., Yakima, Wash., carriages, drives, resaws	1986
Cone Lumber Co., Goshen, Ore., bandmill, edger	1986
Crane Mills, Paskenta, Calif., carriage, setworks	1986
Seattle-Snohomish Mill Co., Snohomish, Wash., trimmer, sorting yard	1986
Willamette Industries Inc., Dallas, Ore., debarker system	1986
Boise Cascade Corp., Goldendale, Wash., green sorter	1987
Boise Cascade Corp., Kettle Falls, Wash., canter infeed	1987
Boise Cascade Corp., Yakima, Wash., log infeed	1987
Gulf Lumber Co., Mobile, Ala., green sorter	1987

Plant modernization projects, Canada

Company, mill location	Startup
Adrien Arsenault Ltd., Balmoral, N.B., chipping system	1985
B.C. Forest Products Ltd., Delta, B.C., chipper, gang, trimmer optimizer, sorter, quad setworks	1985
Canfor Corp., Grande Prairie, Alta., portal log crane	1985
Canfor Corp., Isle Pierre, B.C., conversion to studmill	1985
Clearwater Timber Products Ltd., Kamloops, B.C., planing mill	1985
Clermont Hamel Ltée., Saint Ephrem, Que., slasher	1985
Crestbrook Forest Industries Ltd., Elko, B.C., sorter, MSR line	1985
Bois Daaquam Inc., Daaquam, Que., kiln, boiler	1985
Raoul Guerette Inc., Dégelis, Que., stud line, boiler	1985
J. D. Irving, Chipman, N.B., canter/twin band line	1985
J. D. Irving, Deersdale, N.B., drop sorter	1985
J. D. Irving, Pennfield, N.B., edger	1985
J. D. Irving, Veneer, N.B., slasher, kiln, edger, sorter	1985
Lacroix Lumber Ltd., Causapcal, Que., slasher	1985
Lacroix Lumber Ltd., Port Daniel, Que., edger, twin band, chipper	1985
Marcel Lauzon Inc., East Hereford, Que., edger, optimizer	1985
La Scierie des Outardes, Baie Comeau, Que., modernization, expansion	1985
B.C. Forest Products Ltd., Youbou, B.C., sorter, resaw, log handling	1986
Barrette Chapais Ltée., Chapais, Que., kilns, modernization	1986
Great West Timber Ltd., Thunder Bay, Ont., stud line, kiln	1986
Raoul Guerette Inc., Dégelis, Que., kiln	1986
J. D. Irving, Deersdale, N.B., kiln	1986
J. D. Irving, Sussex, N.B., edger	1986
Lacroix Lumber Ltd., Causapcal, Que., chipper-canter, edger	1986
Lacroix Lumber Ltd., Port Daniel, Que., debarker	1986
Midland Transport Ltd., Chipman, N.B., modernization	1986
United Sawmill Ltd., Hearst, Ont., edger, optimizer	1986
J. D. Irving, all mills, edger and trimmer optimizers	1987
Marcel Lauzon Inc., East Hereford, Que., trimmer optimizer	1987
The Pas Lumber Co. Ltd., Bear Lake, B.C., planing mill	1987

jor chunk to an estimated $60 million.

Significant to the industry's survival program is the way the fourth-ranked company has spread out its capital investments. Boise Cascade Corp. listed seven sawmill remodeling projects at five locations, worth $10.9 million, and nine plywood plant upgrading projects at seven locations, valued at $24.4 million, for a total three-year capital program of $35.3 million.

Willamette Industries Inc. similarly has committed $11.2 to a broad-based program aimed at improving manufacturing efficiency at five lumber, plywood and particleboard mills in the West and South.

In Canada, British Columbia Forest Products Ltd. has listed projects at three B.C. sawmill divisions valued at C$21.3, one of which is a C$15 million sawmill at Vancouver which replaces an older and less efficient mill. Remodeling accounts for the balance.

J. D. Irving Ltd. is upgrading sawmills at five New Brunswick locations through seven projects budgeted for C$6.9 million.

Simpson Timber Co. has indicated long-range plans to spend $40 million on facilities to accomplish a product restructuring program, but honesty prevented us from including all but the estimated cost of a 1985-completed overlay plant in the survey total.

There are other things we didn't report, as well. Read between the lines and you'll realize that the survey does not contain vehicles and rolling stock, logging equipment, or woods improvements. One company listed $1 million for a mobile chipper, but we didn't tabulate it because we hadn't asked for comparable figures across the board.

Another reply we didn't include, for the same reason, listed logging roads, bridges, miscellaneous essential replacements, modernization and energy conservation projects valued at C$18-30 million over a two-year period.

The survey was designed around fixed manufacturing facilities, with the view that otherwise it would be too complicated and responses would be discouraged.

We welcome suggestions for improvement of next year's survey. ■

PLYWOOD AND VENEER

New mills

None

Plant modernization projects

Company, mill location	Startup
Boise Cascade Corp., Elgin, Ore., green end, log processing	1985
Boise Cascade Corp., Florien, La., green end	1985
Boise Cascade Corp., St. Helens, Ore., log processing, log chipping	1985
Boise Cascade Corp., Yakima, Wash., layup line	1985
Champion International Corp., Camden, Texas, green end	1985
Great Southern Plywood, Cedar Springs, Ga., modernization	1985
Hardel Mutual Plywood Corp., Olympia, Wash., modernization	1985
Simpson Timber Co., McCleary, Wash., overlay line (part of long-range, $40-million product restructuring program)	1985
Willamette Industries Inc., Foster, Ore., green end	1985
Willamette Industries Inc., Taylor, La., green end, dryer	1985
Boise Cascade Corp., Medford, Ore., block conditioning	1986
Boise Cascade Corp., Oakdale, La., green end	1986
Boise Cascade Corp., White City, Ore., layup line	1986
Boise Cascade Corp., Yakima, Wash., RF veneer redryer	1986
Great Southern Plywood, Cedar Springs, Ga., reclaim, hog	1986
Boise Cascade Corp., Medford, Ore., layup line	1987

WOOD-BASED PANELS (OTHER THAN PLYWOOD)

New panel plants, U.S.

Company, mill location, product	Annual Capacity*	Startup
Georgia-Pacific Corp., Grenada, Miss., OSB	246	1985
Georgia-Pacific Corp., Skippers, Va., OSB	246	1985
Louisiana-Pacific Corp., Dungannon, Va., Waferboard/OSB	90	1985
Louisiana-Pacific Corp., Newberry, Mich., MDF	50	1985
Louisiana-Pacific Corp., Oroville, Calif., MDF	50	1985
Louisiana-Pacific Corp., Two Harbors, Minn., Waferboard/OSB	80	1985
Louisiana-Pacific Corp., Urania, La., Waferboard/OSB	120	1985
Arrowood Technologies Ltd., Roxboro, N.C., OSB	130	1986
Louisiana-Pacific Corp., New Waverly, Texas, MDF	45	1986
Louisiana-Pacific Corp., New Waverly, Texas, Waferboard	100	1986
Weyerhaeuser Co., Elkin, N.C., OSB	275	1986
Georgia-Pacific Corp., Glade Springs, Va., OSB	200	1987
International Paper Co., Nacogdoches, Texas, OSB	190	1987
Louisiana-Pacific Corp., Urania, La., MDF	45	1987

New panel plants, Canada

Blue Ridge Lumber (1981) Ltd., Whitecourt, Alta., MDF	140	1986

** million ft²; basis appropriate to product.*

Plant modernization projects

Company, mill location, product, nature of project	Startup
Bohemia Inc., Eugene, Ore., Pb, expansion, modernization	1985
Georgia-Pacific Corp., Woodland, Maine, Wb, various changes	1985
Louisiana-Pacific Corp., Hayward, Wis., Wb expansion	1985
Louisiana-Pacific Corp., Houlton, Me., Wb expansion	1985
Roy O. Martin Lbr. Co., Lemoyen, La., OSB, dryer, screens, conveyors, 10% capacity increase	1985
Masonite Corp., Spring Hope, N.C., MDF modernization	1985
Willamette Industries Inc., Lillie, La., Pb, boiler	1985
MDF Technology Inc., Deposit, N.Y., MDF, plant rebuild	1986
Weyerhaeuser Co., Moncure, N.C., Pb, added 90MM ft² capacity	1986
Willamette Industries Inc., Albany, Ore., Pb, dry fiber handling	1986

MISCELLANEOUS PROJECTS, U.S.

Company, mill location, nature of project	Startup
Bohemia Inc., Saginaw, Ore., expand glulam plant	1985
Boise Cascade Corp., Emmett, Idaho, 14-mW cogeneration plant	1985
Gang Nail Systems Inc., Fla., LVL plant	1985
Kitchens Bros. Mfg. Co., Hazlehurst, Miss., generating plant	1985
Yanke Energy Co., Auberry, Calif., 7.5-mW cogeneration plant	1985
Yanke Energy Co., Dinuba, Calif., 11.5-mW cogeneration plant	1985
Arrowood Technologies Ltd., Roxboro, N.C., LVL plant	1986
Bohemia Inc., Lincoln, Calif., 7.5-mW cogeneration plant	1986
Laminated Technologies Inc., Winston, Ore., LVL plant	1986
Pine Products Inc., Prineville, Ore., 5-mW generating plant	1986
Sherman Lumber Co., Sherman Sta., Maine, cogeneration plant	1986
Trus-Joist Corp., Natchitoches, La., LVL plant	1986
Ultrapower Inc., Sonora, Calif., 25-mW cogeneration plant	1986

MISCELLANEOUS PROJECTS, CANADA

Company, mill location, nature of project	Startup
Canfor Corp., Vancouver, B.C., chipping facility	1986

Industry continues to debate the effects of taxing Canadian lumber to make up for the alleged subsidy. Some analysts say duties could do more harm than good

Canadian logs cheaper, but would a tariff help?

Washington, D.C.

By Ted Blackman

There's no doubt about it. Whether you call Canada's stumpage policy a subsidy or not, logs in Canada are cheaper than in the U.S. As a result, Canadian sawmills can sell lumber for less.

The U.S. International Trade Commission's latest analysis of the lumber and logging industries in both countries determined that the average sawmill in Canada paid about 19% less for delivered logs than its U.S. counterpart. Since logging and hauling costs are often higher in Canada, low-priced stumpage gets most of the credit for the lower delivered-log price. The average is $205 per 1000 bd ft in the U.S. and $166 in Canada, according to the ITC report. It was issued in October.

"This report simply underscores what we've been saying from the outset," commented Stanley Dennison, chairman of the U.S. Coalition for Fair Lumber Imports. "Our Canadian competitors have only one real advantage—a government that gives them below-cost stumpage. When a government gives stumpage away to our competitors and allows them to subtract all their costs, that is a subsidy by any common-sense definition of the word."

The coalition's lawyers, Dewey-Ballantine, talked tougher: "The study debunks the Canadian assertion that their artificially low timber prices merely offset high Canadian logging costs."

Canada's response

Every coin has two sides, and Canadians managed to find a bright side to the ITC report.

"Very gratifying," said Mike Apsey, chief trade representative of the Canadian Forest Industries Council about the ITC study. It "shows the fallacy of asserting that the differences between the U.S. and Canada justify legislation to restrict U.S. imports of Canadian lumber."

Later, he told delegates to the Pacific Logging Congress in Vancouver, B.C., "I can summarize the situation from a Canadian perspective by saying that (Americans) claim we're subsidized, we say we're not. They have their numbers and arguments, we have ours. U.S. trade officials agreed with ours in the recent countervailing duty action. Now some in the U.S. would like to change the rules of the game so that the outcome of a new action would be a forgone conclusion in their favor."

Apsey suggested that "Canadian lumber is consumed to the extent that it is today in the U.S. not because we Canadians are doing something wrong, but because we're doing a number of things right."

Apsey pointed to advantages for Canadians which include more modern and efficient sawmills, American consumer preference for Canadian lumber and the high value of the U.S. dollar.

"Currency differences during recent years have clearly worked to the advantage of Canadian producers," he conceded. From 1977 to 1984, the nominal value of the Canadian dollar fell nearly 18% against the U.S. currency. Since then it has stabilized at about 73¢. It held that value even after international efforts started last fall to drive down the U.S. dollar's value.

But adjusting the dollar values for inflation changes the picture somewhat, according to the ITC. Between 1977 and 1984, the U.S. dollar gained 8.3% against Canada's dollar after inflation. Higher inflation in Canada wiped out much of the apparent change in the exchange rate. Only 1.2% of this appreciation occurred in 1982-84, when U.S. lumber demand jumped after the recession. Housing starts in 1983 and 1984 were up 65% from 1982. Canadian lumber sales to the U.S. soared 47% during this period, the ITC reported.

In 1982, Canada sold 58% of its 15.5 billion bd ft of lumber output in the U.S.—about 9 billion bd ft. In 1984, 64% of the 20.6 billion bd ft of lumber cut in Canada was sold south of the border—nearly 13.2 billion feet.

Canadians have increased their lumber capacity. It once was about half of the U.S. capacity, but has increased to two-thirds since 1978, the ITC noted. Most of this increase is in sawmills which sell most of their wood in the U.S.

Nearly all of Canada's productive timberland is owned by federal, and especially provincial, governments. The standard practice in Canada is to assign cutting rights to companies; the price of timber is calculated by various formulas. Stumpage last year ranged from $10 to $12 per 1000 bd ft in most instances.

In the U.S., where most timber is sold competitively, 1984 prices averaged slightly over $100 per 1000 bd ft. Low values assigned to Canadian trees more than made up for other higher costs and resulted in lower delivered-log costs, according to U.S. observers.

"Without the government assistance of extremely low timber prices," the Dewey-Ballantine analysis said, "the Canadian softwood lumber mills would be at about a $30 (per 1000 bd ft) cost disadvantage relative to U.S. producers. It is clear that Canadian lumber is taking increasing shares of the U.S. market—primarily because of this governmental stumpage assistance."

Negative effects in the U.S.

The alleged Canadian subsidies have considerable impact on the U.S., according to timber-industry consultant Paul Ehinger. He told the Pacific Logging Congress in November that subsidized Canadian lumber drives down prices in the U.S., crimping industry profits. This leaves companies short of cash needed to build new mills, update existing ones or do needed forestry work.

Many workers have lost their jobs be-

cause of this unfair competition, Ehinger said, and others have seen reduced wages. Cheaper lumber also forces down the price of U.S. timber, which costs both governments and private landowners money. Governments and schools lose again because people and companies in depressed timber economies pay less tax and need more aid.

In the long run, he added, the depressed timber economy cannot support investment in timber: buying land, planting trees and caring for them.

"Our present low lumber prices are through the courtesy of the Canadian taxpayers, who are receiving a net loss from the sale of their timber resource," Ehinger said. "The irony of this subsidy position is that these lands on which timber removal is being subsidized are only one-third as productive as are most of the U.S. lands where the negative impacts are being felt."

But as Apsey said, both sides have their figures on the subsidy question. The debate also remains over the effects of taxing Canadian lumber to make up for the alleged subsidy.

U.S. wood products trade balance with Canada (first nine months 1985; figures in $000)

Product	Exports	Imports	Balance
Softwood:			
Logs	48,159	13,802	34,357
Lumber	56,594	2,107,269	-2,050,675
Veneer	4,359	8,985	-4,626
Plywood	3,367	4,681	-1,314
Hardwood:			
Logs	8,286	1,183	7,103
Lumber	50,295	24,023	26,272
Veneer	7,021	41,431	-34,410
Plywood	1,891	20,280	-18,389
Wood chips	3,608	18,052	-14,444
Hardboard	9,835	6,321	3,514
Particleboard	6,829	94,110	-87,281
Other wood	59,699	431,678	-371,979
Total	**259,943**	**2,771,815**	**-2,511,872**

SOURCE: U.S. Census Bureau

Establishing duties could hurt

Imposing duties on Canadian lumber could hurt the U.S. economy as a whole more than it helps lumber producers, according to Wharton Econometric Forecasting Associates. The Canadian Forest Industries Council paid for the study, which indicates that lumber tariffs would cost four jobs for every job created in the U.S. The study assumes a 15% hike in lumber prices.

Wharton Econometrics estimated that only four states would gain 4669 sawmilling jobs: Oregon, Georgia, Alabama and Mississippi. The other 46 states would lose 18,080 jobs in various fields.

If lumber prices rose 30%, the study said, the U.S. would lose nearly 27,000 jobs by 1990. Even the South, which would gain the most lumber jobs, would lose more jobs in other sectors if lumber prices rose.

Wharton Econometric's study also assumed that Canada would not retaliate against any U.S. export to that country if the U.S. put tariffs on Canadian lumber. Last year, Canada bought nearly $45 billion from the U.S.

Reaction to the study's figures was predictable. Herb Fierst of the Canadian Forest Industries Council said the Wharton figures are conservative. Some proposals would impose a 60% duty on Canadian lumber, which would cost even more jobs.

But Bill Lange of the U.S. Coalition for Fair Lumber Imports said the Wharton study is not believable. He cited a Congressional Budget Office study which says that Wharton overstated the effects of higher lumber prices.

Individual companies and trade groups in the U.S. have formed their own coalition to lobby against the tariff scheme. This group claims 150,000 U.S. business members, ranging from the American Ladder Assn. to the Tampa (Fla.) Port Authority. Builders and lumber dealers are well represented, along with railroads and others in the shipping business.

A major target is H.R. 2451, written by Rep. Sam Gibbons (D-Fla.). It would impose duties on products made from subsidized natural resources. The bill's definition of subsidy would include Canadian timber, which is priced considerably lower than in the U.S. The bill's removal rights section says that selling government timber below prices prevailing in the U.S. is a subsidy.

(Canada contends that its pricing system is not a subsidy. The ITC's 1982 study supported Canada on this point: the ITC said it found no evidence of a significant subsidy for Canadian sawmillers. "Nothing in this [1985] report should be construed to indicate how the Commission would find in an investigation . . . ," the current study states.)

Canada's Apsey said that the part of H.R. 2451 which covers stumpage pricing "is a unilateral, arbitrary attempt led by a handful of U.S. lumber producers to change the international rules under which our two countries have been operating." He added that the bill tries to get around the 1983 ITC ruling by "changing the rules and establishing new and arbitrary criteria for what constitutes a subsidy."

Sen. Dale Bumpers (D-Ark.) told the Southern Forest Products Assn. annual meeting in November that there is no doubt that Canada subsidizes its timber. He said he supports both the Gibbons bill and another which would limit the amount of Canadian lumber allowed in the U.S.

Although House committee work on the Gibbons bill was expected in December, it seemed unlikely that it could go to the House floor until sometime this year.

John Koelemij, president of the National Assn. of Home Builders, called the Gibbons bill "the perfect way to damage American interests."

The bill "not only would kill four U.S. jobs for every one it created, but it would also directly increase consumer costs for new homes, newsprint and other products, and invite retaliation against a broad range of American goods sold in Canada," he claimed.

The NAHB originally said that the Gibbons bill would add $2500 to the price of a single-family home. The group later backed off from this assessment. The Congressional Budget Office calculates the effect at $300. ■

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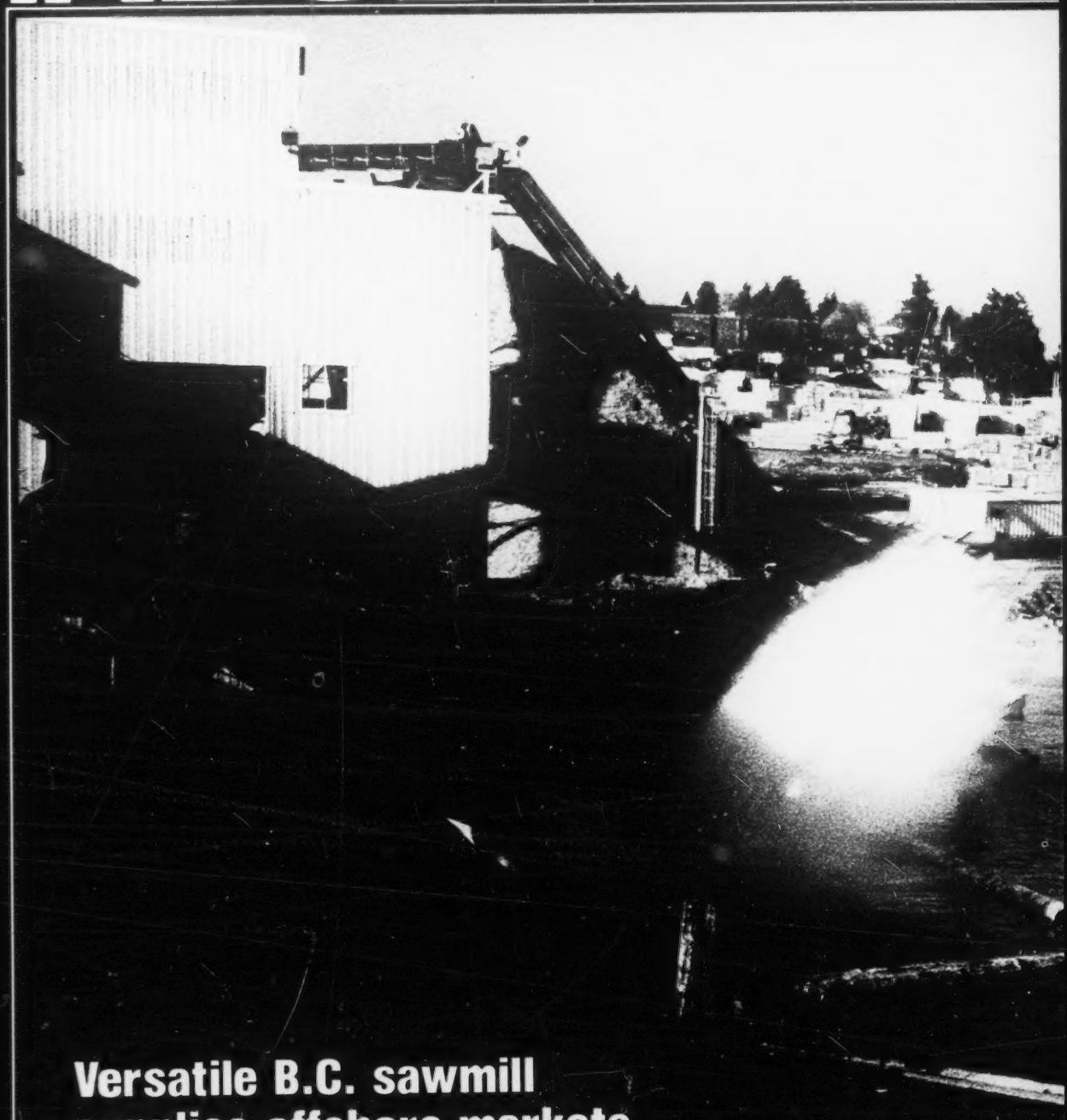
MARCH 1986

FOREST INDUSTRIES

LOGGING/PULPWOOD/FORESTRY/LUMBER/PANELS



Versatile B.C. sawmill supplies offshore markets

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MARCH

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Changing timber size forces change in milling philosophy. New MacMillan Bloedel mill in Chemainus, B.C., has high-value lumber as a goal

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Japan-USSR chip pact may hurt U.S. producers

TOKYO, JAPAN—Japan and the Soviet Union are trying to improve their trade relations, and the news may bode ill for U.S. chip producers.

The Japanese Chip Trading Co. and the Soviet Lumber Export Corp. recently signed a $500-million contract. The Japanese will help the Russians produce wood chips and the Russians will supply softwood chips—and possibly lumber—to Japan. According to the National Forest Products Assn.'s "International Trade Report," the Japanese will supply machinery and facilities to make chips and pulp for industrial use.

Obviously this could have an impact on U.S.-Japanese trade. Last year, Japan bought about $132 million worth of wood chips and $138 million worth of softwood lumber from the U.S. ■

U.S. forest industry results ($ millions)

Company	4th quarter 1985 Sales	% chg	Earnings	% chg	Full year 1985 Sales	% chg	Earnings	% chg
Boise Cascade	578	-1.5	19.0	n.m.	3,700	-2.7	104.9	49.4
Champion Intl.	1185	-29.3	38.1	n.m.	5789	18.7	163	n.m.
Chesapeake	123.6	62	5.8	-54	464	30	15.7	-29
Crown Zellerbach	742.8	-7.8	17	88	3083	-1.1	-20.6	n.m.
Georgia-Pacific	1580	-10.0	43.0	n.m.	6714	0.5	187	36.4
Hammermill	554.5	8.2	4.5	-72	1877	1.3	26.8	-48.3
Intl. Paper	1111	-3.0	45.8	n.m.	4502	-4.3	131.3	9.3
Louisiana-Pacific	312.6	10.1	5.4	170.9	1201	2.5	25.5	-39.6
Pope & Talbot	74.9	-1.9	0.8	n.m.	325	1.6	6.6	n.m.
Scott Paper	826.6	10.6	49.6	-0.8	3019	7.1	201.1	7.1
Weyerhaeuser	1238	-12.1	65.8	132.1	5206	-6.2	200.1	-11.8
Willamette Inds.	272.8	-8.5	15.9	-34.6	1152	-2.8	66.2	-3.5

n.m. = Not meaningful

NFPA board changes membership package

WASHINGTON, D.C.—National Forest Products Assn. leaders are still trying to find a structural formula that will attract a much-needed increase in membership.

Governors in January approved a concept dubbed "NFPA Plus" under which members would support a core of basic programs plus at least one specialized activity.

The core would cover congressional relations, environmental and health programs, media relations, and information and statistics. NFPA's acknowledged strength—and member appeal—lies in the effectiveness of its government affairs activities.

Councils on the membership menu, and their missions, are:

- Market Support Council (formerly Product Division); to maintain acceptance of wood construction and products among federal, state and local code agencies. This includes technical support such as engineering data analysis and fire research.
- Public Timber Council (formerly Public Timber Division); to oversee federal resource agency relations and public timber supply programs. Examples are analysis of timber sale contract policies, review of national forest management planning and coordination of industry litigation.
- American Forest Council (a merger of NFPA's Private Timber Division with the American Forest Institute, which occurred Jan. 1, 1986); to encourage greater productivity from private timberlands and to carry on resource communications and public awareness activities. AFC is funded by NFPA and the American Paper Institute.
- International Trade Council (formerly International Trade Division); to coordinate industry action on trade policy and international trade development. Trade barrier issues and foreign market promotion are on the work list.

According to NFPA, the changes react to a 1985 member sample survey and should result in reduced membership dues. A board of governors meeting to consider a timetable was scheduled for Feb. 25. ■

Weak wood, paper sales battered industry in '85

SAN FRANCISCO, CALIF.—It will come as no surprise, but once again, mediocre markets for paper and wood products have produced mediocre earnings for the forest products industry.

A sample of a dozen large companies' fourth-quarter and annual sales and profits figures showed a mixed bag of results. Most firms made money for the year as a whole and during the fourth quarter. But in many cases sales were lower than a year earlier.

Boise Cascade Corp. chairman and chief executive officer (CEO) John Fery blamed the strong U.S. dollar for poor results from its paper business. The dollar's strength made it harder to export and stimulated imports.

On the solid-wood side, Fery noted that prices remain at recessionary levels. However, Boise made money on its building products in 1985, reversing a sizable loss in 1984. Restructuring, consolidation and containing costs produced the turnaround, Fery said.

Champion International Corp. managers must be smiling. The company lost $6 million in 1984, but earned $163 million last year despite poor markets. It was the first full year in which earnings of the former St. Regis Corp. were included in Champion's statistics. Since it bought St. Regis, Champion has sold more than $1 billion of assets.

As a result of the restructuring, Champion is "now broadly positioned in the white paper business, which is our strength," said chairman and CEO Andrew Sigler.

Georgia-Pacific Corp. had one of its best years ever in building products in 1985, noted chairman and CEO Marshall Hahn. The sector's operating profits rose to $391 million from $379 million in 1984. But weak paper markets hurt G-P's overall results: from $202 million in 1984, the paper sector's profits plunged to $29 million. Profits from all continuing operations fell 18% in 1985. Once extraordinary items, discontinued operations and other "footnote material" are accounted for, G-P earnings rose 36% to $187 million.

John Georges, International Paper Co.'s chairman and CEO, summed up 1985: "Last year was very difficult for the forest products industry." ■

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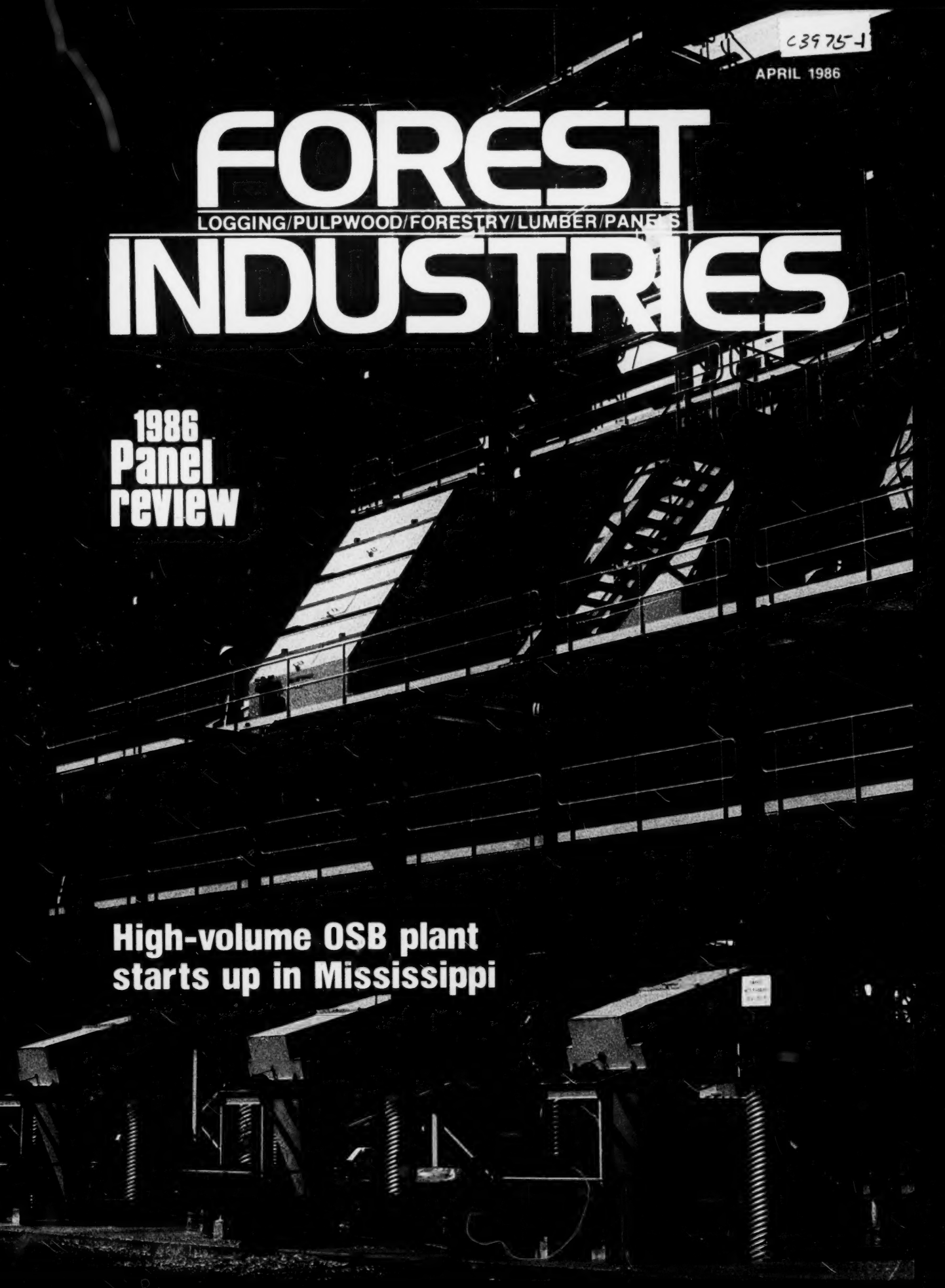
APRIL 1986

FOREST INDUSTRIES

LOGGING/PULPWOOD/FORESTRY/LUMBER/PANELS

1986 Panel review



High-volume OSB plant starts up in Mississippi

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Panel Review

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Panel output, capacity continues to increase
Our annual panel review shows that structural panel and MDF production set more records while particleboard continues to climb. Prices fail to pace demand, but capacity keeps growing

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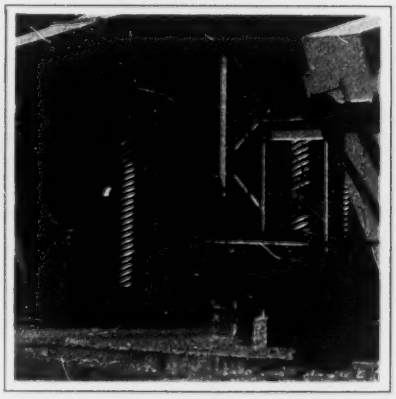

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Structural panel and MDF production set more records while particleboard maintains a steady climb. Prices fail to pace demand, but capacity continues to grow

Panel output, capacity continues to increase

San Francisco, California _ The dichotomous relationship between product prices and demand continued to plague the domestic wood-based panel industry in 1985. Discussion of overcapacity and depressed prices aside, most product segments responded to the marketplace with production above 1984 levels. Structural panel and medium-density fiberboard (MDF) producers set new records in the process.

It takes a while for all the production data to filter through the various statistics-gathering systems, so in some cases we're still dealing with estimates.

These are from expert estimators, however, like the economists at American Plywood Assn. who have projected 23 billion ft² (⅜-in. basis) for U.S. structural panel production.

(See sidebar for Canadian figures, also up from 1984.)

This is a 4.7% gain over the year before, when production totaled a shade under 22 billion ft². Structural panel production has increased annually since the housing collapse forced output to a low point in the 1980-82 period.

MDF production also has set a new record every year since a latter-day low point in 1982. The National Particleboard Assn. has estimated 1985 output at a record 700 million ft² (¾-in. basis), an increase of 10.2% over 1984 production of just under 635 million ft².

Particleboard production last year gained 3.3% on 1984, with the NPA estimating 3.3 billion ft² (¾-in. basis). The record year was 1978 with 3.7 billion ft².

Hardboard production declined 7.8% to 6.3 billion ft² (⅛-in. basis) last year. Output, which has traced peaks and valleys over the last decade, has declined since a 7.3 billion ft² spike on the chart in 1983.

Structural panels

At APA, the ink would hardly become dry on one estimate of 1985 structural panel production before an upward revision would be necessary. Earlier this year, a forecast of 22.6 billion ft² was adjusted to 22.7 billion ft² before being discarded in favor of the current 23 billion ft² projection, as more precincts were heard from.

Total structural panel capacity in the U.S. last year was 28.4 billion ft² from 168 mills, according to APA figures. That figure should rise to 30.8 billion ft² by 1990. Waferboard/OSB represented 9% of the total capacity figure last year, or 2.6 billion ft². This leaves the softwood plywood industry with a capacity figure of 25.8 billion ft².

In 1990, the share of total structural panel capacity assigned to waferboard/OSB is projected at 14% as the number of U.S. mills rises to 35 from 22 in 1985. This works out to waferboard/OSB capacity of 4.3 billion ft² and softwood plywood capacity of 26.5 billion ft².

Softwood plywood prices have failed to respond to market improvement. The composite price calculated by *Random Lengths* dipped sharply to about $185 late in the first quarter of 1985 before rebounding to spend most of the summer in the $215-220 range. It then slid to a point just above $200 at year end and remained flat thereafter.

Fourth-quarter prices as indicated by the composite tracked 1984 closely until the first of December, when the 1984 index leveled off at about $210.

In the second quarter, prices last year were much higher than 1984 levels, a situation which was reversed in the third quarter.

U.S. Panel Production, 1975-1985

(thousand ft²)

Year	Structural panels (⅜-in. basis)	Particleboard (¾-in. basis)	Hardboard (⅛-in. basis)	MDF (¾-in. basis)	Hardwood plywood (surface measure)
1975	16,050,180	2,538,934	6,237,906	215,496	1,279,592
1976	18,440,000	3,202,225	7,066,022	280,036	1,463,135
1977	19,376,000	3,592,910	7,200,000	441,354	1,478,000
1978	19,964,000	3,720,369	7,800,000	508,416	1,480,571
1979	19,653,000	3,376,488	7,687,798	506,728	1,434,521
1980	16,468,000	2,949,897	6,140,000	493,140	1,312,000
1981	17,023,000	2,869,352	6,104,000	516,102	1,270,220
1982	16,402,554	2,393,066	5,586,918	446,157	1,162,600
1983	20,821,342	2,919,544	7,302,702	605,098	1,162,629
1984	21,967,917	3,195,586	6,837,118	634,974	1,264,889
1985	22,838,170	3,300,000 (est.)	6,300,146	700,000 (est.)	N.R.

N.R.= Not Reported.

APA looks for continued stable demand in U.S. structural panel markets through 1987 despite an expected softening of housing starts. From the 1985 level of 1.73 million conventional units, APA projects starts at 1.7 million this year and 1.55 million in 1987, when mortgage interest rates are likely to swing upward once again.

Modest consumption improvements are foreseen for repair, non-residential construction, industrial and export markets. Coordinated wood industry promotion efforts are focusing on non-residential construction as the category most likely to produce a significant wood consumption increase.

Particleboard and MDF

Landmarks were established by the particleboard and MDF industry last year in three areas, according to NPA general manager Rich Margosian: formaldehyde emission regulations, value-added products and increased production capacity.

The industry geared up to meet a new federal regulation on formaldehyde emissions as U.S. Department of Housing and Urban Development regulation 24CFR3280 went into effect Feb. 11, 1985, establishing a maximum emission level for particleboard and hardwood plywood used in manufactured housing construction.

By the end of 1985, over 80% of all particleboard produced in the U.S. met the HUD level of 0.3 ppm. In January 1986, the NPA adopted a voluntary industry standard for particleboard, NPA 8-86, which accepts the emission levels and testing protocol of the HUD rule and provides for a choice of third-party or mill certification.

Companies representing 92% of U.S. particleboard capacity okayed the standard, which can be applied to all particleboard products.

Other state and federal agencies are studying the formaldehyde issue.

Minnesota passed a state law in 1985 regulating all panel products used in construction, and applies the HUD particleboard standard and testing protocol to MDF as well.

OSHA has published a proposed standard that will reduce workplace formaldehyde exposure from the currently approved levels.

The Consumer Product Safety Commission and Environmental Protection Agency are investigating pressed-wood products and proposed regulations are expected by mid-1986. The NPA and industry are working actively with these agencies, Margosian said.

Producers are upgrading products, aiming toward high-end industrial markets, Margosian said. Lightweight paper laminates and increasing use of thin vinyls and water-base laminating adhesives have created a demand for finer-textured surfaces.

Particleboard makers are adding refiner capacity and improving forming machines in an effort to narrow the difference between that product and medium-density fiberboard.

As for capacity increases, the MDF industry added or announced over 250 million ft^2 (¾-in. basis) in 1985. This includes new Louisiana-Pacific Corp. facilities in Oroville, Calif., and Newberry, Mich., and plants announced for New Waverly, Texas, and Urania, La. MDF Technology Inc. has purchased and rebuilt the old Celotex plant in Deposit, N.Y., and had planned to begin production in March 1986.

Weyerhaeuser Co. has announced plans to build a new 90 million ft^2/yr particleboard plant next to its Moncure, N.C., MDF facility. It will feature a 9 x 24-ft press and produce 100% industrial-quality board.

Industry capacity for MDF will approach 1.1 billion ft^2 by the end of 1986, Margosian said, close to 30% of the 3.8 billion ft^2 particleboard capacity.

Supplies of particleboard and MDF should be adequate for the short term, but pressure on the supply of wood residues could inhibit industry expansion in the future.

Margosian also cited possible raw material problem areas such as competition for residues from pulp mills and wood-fueled boilers, and reduced residues from U.S. sawmills cutting production in the face of Canadian softwood lumber imports. Higher panel prices could result. ■

Canadian panel industry scores gains

VANCOUVER, B.C.—Wood-based panel production in Canada for the most part responded positively to an improved economy last year.

Statistics Canada reported softwood plywood production at 1,957,887 m^3, up 6% from a 1984 figure of 1,846,369 m^3.

Waferboard and OSB production increased 12.3% to 1,336,566 m^3 last year from a 1984 level of 1,190,254 m^3.

Particleboard bounded to 1,047,500 m^3, up 24.2% from the 1984 figure of 843,346 m^3.

Hardboard production for 1985 was reported at 155,929 m^3, vs. 160,855 m^3 the year before, a 3% decline.

Last year's waferboard and OSB production, while well above the year before, represented a moderation of the growth rate which saw a jump between 1983 and 1982 of 75% as capacity mushroomed.

British Columbia is the source of most Canadian softwood plywood. According to the Council of Forest Industries of B.C., mills in that province produced 1.855 billion ft^2 (⅜-in. basis) last year, up nearly 6% from 1984.

Strong Canadian demand accounted for most of the increased production and helped bolster depressed prices. Export shipments were maintained at or above 1984 levels, with significant increases to the United Kingdom balancing slightly reduced volumes to other export markets. The U.K. is Canada's principal overseas plywood market.

The closure of a major coastal mill in 1985 reduced the industry's production capacity slightly. It was partially offset by the opening of a new mill in the Northern Interior and capacity gains achieved elsewhere through improved processing technology.

"The predicted market loss and price pressure because of waferboard competition has not materialized to any great extent," observed Art W. Kempthorne, COFI plywood sector manager.

COFI Exterior Canadian Softwood Plywood has been approved for engineering applications by the technical committee responsible for the Canadian Timber Engineering Code, joining Exterior Douglas Fir Plywood.

"The use of preserved wood foundations is steadily increasing in Canada and demand for PWF construction plywood is growing at a very satisfactory rate," Kempthorne added.

In Germany, COFI is now authorized to certify Canadian plywood to full DIN Standard requirements—this is seen as a breakthrough, as special licenses previously limited wood use in construction to prefabricated applications.

Plywood code acceptances have also been expanded in Sweden and Denmark. The concrete form market for Canadian plywood is improving in Italy, while China remains a major focus of market expansion activities.

Canadian housing starts in 1984 totaled 64,686 units. Quarterly through 1985, the seasonally-adjusted annual rate tracked at 63,000, 69,000, 87,000 and 93,000 units. ■

1986 Directory of Panel Plants

A LONG-STANDING TRADITION has been restored this year: We have brought back the FOREST INDUSTRIES Directory of Panel Plants, historically part of our annual Panel Review.

To obtain current data, we mailed questionnaires last fall to all the panel plants in North America we could track down. We then sent follow-up questionnaires to non-respondents and, when necessary, contacted companies by telephone.

The following directory breaks down the panel industry by product. Each section lists producers by company name, location of headquarters, mill locations, production capacities, and estimated 1985 production. In some cases where companies did not provide information about mill capacities, we relied on news clippings, corporate annual reports or the *1986 Directory of the Forest Products Industry*, published late last year by Miller Freeman Publications.

We have tried to make the directory as accurate and complete as possible. We invite readers to inform us of any errors or omissions.

Finally, we would like to acknowledge the contribution of editorial assistant Corinne Shulman, who was responsible for gathering, verifying, organizing and presenting all the data in this directory.

SOFTWOOD PLYWOOD — U.S.

Company & Plants	Capacity*	1985 Est. Prod.
Anacortes Plywood Inc., Anacortes, Wash.	130	72
Astoria Plywood Corp., Astoria, Ore.	110	N.R.
Bald-Knob Cress-Ply, Creswell, Ore.	N.R.	N.R.
Bingen Plywood Co., Sub. of SDS Lumber Co., Bingen, Wash.	72	N.R.
Bohemia Inc., Eugene, Ore.		
Culp Creek Div., Culp Creek, Ore.	96	96
Drain Div., Drain, Ore.	105	75
Vaughn Div., Vaughn, Ore.	115	96
Boise Cascade Corp., Boise, Idaho		
Emmett, Idaho	157.5	124.7
Florien, La.	190	223
Oakdale, La.	189.8	158
Moncure, N.C.	87	91
Elgin, Ore.	150	140
Medford, Ore.	262.5	322.1
White City, Ore.	105	118.8
Chester, S.C.	165	165
Kettle Falls, Wash.	157.5	160.3
Yakima, Wash.	150	120.7
Brand-S Corp., Corvallis, Ore.		
Corvallis, Ore.	125	124
Natron Div., Springfield, Ore.	104.5	N.R.
Centralia Plywood & Veneer Co., Div. of Winlock Veneer Co., Centralia, Wash.	N.R.	N.R.
Champion Intl. Corp., Stamford, Conn.		
Cordova, Ala.	N.R.	N.R.
Waycross, Ga.	82.5	N.R.
Holden, La.	N.R.	N.R.
Bonner, Mont.	319	N.R.
Libby, Mont.	85	85
Roseburg, Ore.	170	N.R.
Silverstreet, S.C.	229	229
Camden, Texas	300	293.3
Corrigan, Texas	240	228.7
Chemclad Corp., Auburndale, Fla.	N.R.	N.R.
Chesapeake Corp., West Point, Va.		
Cheapeake Plywood, Pocomoke City, Md.	72	60
Coastal Lumber Co., Weldon, N.C.		
Havana, Fla.	130	133.4
Crown Zellerbach, San Francisco, Calif.		
Omak, Wash.	185	177
DAW Forest Products, Lake Oswego, Ore.		
Redmond, Ore.	170	163
Diamond Lands Corp., Red Bluff, Calif.	78	78
Forestply Industries Inc., Kincheloe, Mich.	50	25
Fort Vancouver Plywood, Vancouver, Wash.	120	120
Fourply Inc., Grants Pass, Ore.	150	127.5
Georgia Kraft Co., Rome, Ga.		
Woodkraft Div., Madison, Ga.	280	280
Georgia-Pacific Corp., Atlanta, Ga.		
Monroeville, Ala.	240	N.R.
Talladega, Ala.	228	N.R.
Crossett, Ark.	450	N.R.
Fordyce, Ark.	255	N.R.
Hawthorne, Fla.	240	N.R.
Montecello, Ga.	280	N.R.
Warm Springs, Ga.	264	N.R.
Gloster, Miss.	240	N.R.
Louisville, Miss.	235	N.R.
Taylorsville, Miss.	260	N.R.
Dudley, N.C.	185	185
Whiteville, N.C.	240	N.R.
Coquille, Ore.	180	N.R.
Springfield, Ore.	160	N.R.
Prosperity, S.C.	155	N.R.
Emporia, Va.	240	N.R.
Great Southern Plywood Co., Cedar Springs, Ga.	150	155
Gregory Forest Products Inc., Glendale, Ore.	192	192
Hardel Mutual Plywood, Olympia, Wash.	140	135
Hood Industries Inc., Beaumont, Miss.	100	109.7
Wiggins, Miss.	175	135
Hoquiam Plywood Co. Inc., Hoquiam, Wash.	96	81
International Paper Co., New York, N.Y.		
Gurdon, Ark.	200	N.R.
Springhill, La.	180	N.R.
ITT Rayonier Inc., Stamford, Conn.		
Peninsula Plywood, Port Angeles, Wash.	80	N.R.
Kirby Forest Industries Inc., Houston, Texas		
Bon Wier, Texas	250	250
Cleveland, Texas	248	248
Silsbee, Texas	169	169
Louisiana-Pacific Corp., Portland, Ore.		
Logansport, La.	150	N.R.
Urania, La.	200	N.R.
Lufkin, Texas	140	N.R.
New Waverly, Texas	200	N.R.
Kogap Manufacturing Co., Medford, Ore.	250	235
Lane Plywood Inc., Eugene, Ore.	150	150
Lang Plywood Co., White City, Ore.	100	80
Lea Lumber & Plywood Co., Windsor, N.C.	2.5	N.R.
Leading Plywood Co., Corvallis, Ore.	115	N.R.
Linnton Plywood Assn., Portland, Ore.	100	98
MacMillan Bloedel Inc., Vancouver, B.C.**		
Pine Hill, Ala.	N.R.	N.R.
Alberni Plywood Div., Port Alberni, B.C.	183	N.R.
Manville Forest Products, New York, N.Y.		
Huttig, Ark.	100	90
Manville Plywood, Joyce, La.	200	183

N.R. = Not Reported.

**Million sq ft, basis as follows: structural panels, ⅜-in.; hardwood plywood, surface measure; particleboard, ¾-in.; hardboard, ⅛-in.; MDF, ¾-in.; and insulation board, ½-in.*

***Duplicate listings are included for companies which have mills both in the U.S. and Canada producing a given panel product.*

Company & Plants	Capacity*	1985 Est. Prod.
Medford Corp., Medford, Ore.	212	208
Southern Oregon Plywood, Grants Pass, Ore.	108	120
Miller Redwood Co., Sub. of Stimson Lumber Co., Merlin, Ore.	100	75
Mt. Baker Plywood Inc., Bellingham, Wash.	67.5	62
Multnomah Plywood Corp., St. Helens, Ore.	150	N.R.
North Pacific Plywood Co., Graham, Wash.	85	84
Tacoma, Wash.	84	84
North Santiam Plywood Co., Mill City, Ore.	168	174
Owens-Illinois Inc., Toledo, Ohio		
Jasper, Texas	146	147.2
Plum Creek Timber Co. Inc., Seattle, Wash.		
Columbia Falls, Mont.	115	110
Kalispell, Mont.	115	100
Pleasant Valley Plywood, Sweet Home, Ore.	65	60
Potlatch Corp., San Francisco, Calif.		
Lewiston, Idaho	150	N.R.
Pierce, Idaho	147	144
Saint Maries, Idaho	176	160
Premier Plywood Corp., Westfir, Ore.	84	N.R.
Puget Sound Plywood Inc., Tacoma, Wash.	80	N.R.
Roseburg Lumber Co., Roseburg, Ore.		
Coquille, Ore.	180	180
Mills 1 & 2, Dillard, Ore.	380	380
Riddle, Ore.	350	350
Roseburg, Ore.	150	150
Scotch Plywood Co. of Alabama, Fulton, Ala.	N.R.	N.R.
Simpson Timber Co., Seattle, Wash.		
Albany, Ore.	72	N.R.
Shelton, Wash.	N.R.	N.R.
South Coast Lumber Co., Brookings, Ore.	135	130.7
Southwest Forest Industries, Phoenix, Ariz.		
Albany, Ore.	180	N.R.
Grants Pass, Ore.	120	N.R.
Stevenson Co-Ply Inc., Stevenson, Wash.	100	100
Sun Plywood Inc., Roseburg, Ore.		
North Bend, Ore.	150	N.R.
Textured Forest Products, Washougal, Wash.	3	2.5
Timber Products Co., Medford, Ore.		
Tim-Ply Co., Grants Pass, Ore.	100	96
Temple-Eastex Inc., Diboll, Texas		
Pineland, Texas	166	164
Union Camp Corp., Wayne, N.J.		
Chapman, Ala.	170	150
White City Plywood Co., Springfield, Ore.		
White City, Ore.	57	N.R.
Warm Springs Forest Products Industries,		
Warm Springs, Ore.	80	80
Weyerhaeuser Co., Tacoma, Wash.		
Millport, Ala.	N.R.	N.R.
Dierks, Ark.	120	N.R.
Mountain Pine, Ark.	120	N.R.
Philadelphia, Miss.	N.R.	N.R.
Jacksonville, N.C.	158	N.R.
Plymouth, N.C.	100	110
Wright City, Okla.	120	92
Snoqualmie Falls, Wash.	95	N.R.
Willamette Industries Inc., Portland, Ore.		
Emerson, Ark.	147	N.R.
Dodson, La.	147	N.R.
Santiam Southern Plywood, Ruston, La.	85.8	N.R.
Taylor, La.	147	N.R.
Zwolle, La.	147	N.R.
Dallas, Ore.	155.1	N.R.
Foster, Ore.	139	N.R.
Lebanon, Ore.	131.6	N.R.
Springfield, Ore.	112.8	N.R.
Foster Plywood Sweet Home, Ore.	155.1	N.R.
Sweet Home, Ore.	131.6	N.R.

SOFTWOOD PLYWOOD — CANADA

Balco Industries Ltd., Kamloops, B.C.	115	115
British Columbia Forest Products Ltd.,		
Vancouver, B.C.		
New Westminster, B.C.	90	64
Canfor Ltd., New Westminster, B.C.		
Canadian Forest Products Ltd., Grand		
Prairie, Alta.	70	70
Canadian Forest Products Ltd., New		
Westminster, B.C.	370	N.R.
Cantree Plywood Corp., Div. of Alpa Lumber		
Inc., New Westminster, B.C.	90	N.R.
Crestbrook Forest Industries Ltd.,		
Cranbrook, B.C.		
Fort MacLeod, Alta.	50	50
Crown Forest Industries, Vancouver, B.C.		
Armstrong, B.C.	160	160
Fraser Mills, Coquitlam, B.C.	40	40
Kelowna, B.C.	85	85
Evans Products Co. Ltd., Kamloops, B.C.		
Golden, B.C.	130	132
Savona, B.C.	50	50
Federated Cooperatives, Canoe, B.C.	72	67
MacMillan Bloedel, Vancouver, B.C.**		
Pine Hill, Ala.	N.R.	N.R.
Alberni Plywood Div., Port Alberni, B.C.	183	N.R.
Richmond Plywood Corp., Richmond,		
B.C.	165	N.R.
Saskatchewan Forest Products, Prince		
Albert, Sask.		
Hudson Bay, Sask.	81.5	81
Weldwood of Canada Ltd., Vancouver, B.C.		
Quesnel, B.C.	N.R.	N.R.
Williams Lake, B.C.	150	N.R.
Zeidler Forest Industries, Edmonton,		
Alta.	124	116.3

HARDWOOD PLYWOOD — U.S.

Abbeville Plywood Inc., Marietta, Ga.	N.R.	N.R.
Allegheny Lumber & Panel, Elkins, W. Va.	3	N.R.
Architectural Plywood, N. Hollywood, Calif.	N.R.	N.R.
Atlantic Veneer Corp., Beaufort, N.C.	3	N.R.
Benson Veneer Inc., Benson, N.C.	2	N.R.
Birchwood Lumber & Veneer Co.,		
Birchwood, Wis.	7.5	N.R.
Birchwood Manufacturing, Rice Lake, Wis.	N.R.	N.R.
Bradford Veneer & Panel, Bradford, Vt.	10	N.R.
Bradley Plywood Corp., Savannah, Ga.	N.R.	N.R.
Bruce Hardwood Floors, Center, Texas	30	N.R.
Buffalo Veneer & Plywood, Buffalo, Minn.	3	N.R.
Buffelen Woodworking Co., Tacoma, Wash.	29.9	23
Calypso Plywood Co. Inc., Calypso, N.C.	12	N.R.

N.R. = Not Reported.

**Million sq ft, basis as follows: structural panels, ⅜-in.; hardwood plywood, surface measure; particleboard, ¾-in.; hardboard, ⅛-in.; MDF, ¾-in.; and insulation board, ½-in.*

***Duplicate listings are included for companies which have mills both in the U.S. and Canada producing a given panel product.*

HARDWOOD PLYWOOD — U.S. (CONTINUED)

Company & Plants	Capacity*	1985 Est. Prod.
Capital Veneer Works Inc., Montgomery, Ala.	10	N.R.
Carolina Panel Co. Inc., Lexington, N.C.	3	1.6
Carolina Plywood Co. Inc., Apex, N.C.	N.R.	N.R.
Center Plywood Co. Inc., Center, Texas	N.R.	N.R.
Chowan Veneer Co. Inc., Edenton, N.C.	3	N.R.
Columbia Carolina Corp., Sub. of Columbia Forest Products, Old Fort, N.C.	32	N.R.
Columbia Panel Manufacturing Co., Thomasville, N.C.	N.R.	N.R.
Columbia Plywood Corp., Sub. of Columbia Forest Products, Portland, Ore.		
Klamath Falls, Ore.	130	128
Cumberland Forest Products, London, Ky.	N.R.	N.R.
Danville Plywood Corp., Danville, Va.	N.R.	N.R.
Darlington Veneer Co. Inc., Darlington, S.C.	24	24
Davidson Plyforms Inc., Grand Rapids, Mich.	36.4	N.R.
Day Plywood Inc., Memphis, Tenn.		
Cuthbert, Ga.	75	N.R.
Denny Plywood Co., Roseboro, N.C.	2	N.R.
Dillon Veneer & Plywood, Dillon, S.C.	5	4.5
Dodge Veneers Inc., Grand Rapids, Mich.	N.R.	N.R.
Drexel Heritage Furnishings, Kingstree, S.C.	1.2	1
Eastern Door & Panel Corp., Danville, Va.	1	N.R.
Eggers Industries, Two Rivers, Wis.	2	2
Fibreboard Corp., Sub. of Louisiana-Pacific, Standard, Calif.	120	65
Burney, Calif.	60	N.R.
Florida Plywoods Inc., Greenville, Fla.	12	9
Georgia-Pacific Corp., Atlanta, Ga.		
Savannah, Ga.	185	N.R.
Eugene, Ore.	200	N.R.
Hasty Plywood Co., Maxton, N.C.	N.R.	N.R.
Hayworth Roll & Panel Co., High Point, N.C.	6.3	5.5
Henry County Plywood, Ridgeway, Va.	4	2
Hoosier Panel Co. Inc., New Albany, Ind.	20	N.R.
Howell Plywood Corp., Dothan, Ala.	1	N.R.
Idaho Veneer Co., Post Falls, Idaho	11	4
Ingram Plywoods Inc., Thomasville, N.C.	N.R.	N.R.
IPP Inc., Memphis, Tenn.	N.R.	N.R.
Iron Wood Products Corp., Bessemer, Mich.	N.R.	N.R.
Jamestown Plywood Corp., Jamestown, N.Y.	8	7
Jasper Laminates, Jasper, Ind.	18	19
Jasper Wood Products Co., Jasper, Ind.	N.R.	N.R.
Jefferson Wood Working, Louisville, Ky.	N.R.	N.R.
Keller Products, Manchester, N.H.	N.R.	N.R.
Lea Lumber & Plywood Co., Windsor, N.C.	28	N.R.
Lenderink Inc., Belmont, Mich.		
Gillett, Wis.	2	1
Marion Plywood Corp., Marion, Wis.	6	4
Marsh Plywood Corp., Sub. of Marsh Furniture, Highpoint, S.C.		
Pamplico, S.C.	N.R.	N.R.
Masonite Corp., Chicago, Ill.		
Warren, Ark.	N.R.	N.R.
Statesville, N.C.	N.R.	N.R.
Watsontown, Pa.	N.R.	N.R.
Memphis Plywood Corp., Memphis, Tenn.	4	1.5
Mill City Plywood Co., Minneapolis, Minn.	5	3
Mt. Baker Plywood Inc., Bellingham, Wash.	2.8	2.7
Multi-Ply Corp., Danville, Va.	4.5	N.R.
New Linwood Inc., Gillett, Wis.	10	N.R.
Panoply Corp., Lexington, Tenn.	9	5
Paramount Plywood Products Inc., New Albany, Ind.	5	N.R.
Patat Plywood Corp., Rockmart, Ga.	13	10
Patrick Industries Inc., Elkhart, Ind.	N.R.	N.R.
Pavco Industries Inc., Pascagoula, Miss.	30	N.R.
Pluswood Inc., Oshkosh, Wis.	50	N.R.
Plycraft Inc., Lawrence, Mass.	N.R.	N.R.
Ply-Gem Manufacturing, New York, N.Y.		
Gloucester City, N.J.	N.R.	N.R.
Ply-Curves Inc., Grand Rapids, Mich.	3	1.5
Ply-Forms Inc., Bay City, Mich.	N.R.	N.R.
Quality Plywood Co. Inc., Waynesboro, Miss.	10	10
Rankin Bros. Co., Fayetteville, N.C.	5	N.R.
Rutland Plywood Corp., Rutland, Vt.	27.7	23.9
Southern Inc., Wilmington, N.C.	N.R.	N.R.
Southern Laminating Co., Memphis, Tenn.	6	4.8
Speltz Plywood Corp., Memphis, Tenn.	4	N.R.
Standard Plywoods Inc., Clinton, S.C.	30	N.R.
States Industries Inc., Eugene, Ore.	240	120
Statesville Plywood & Veneer Co., Statesville, N.C.	10	N.R.
Stilley Plywood Co. Inc., Conway, S.C.	15	N.R.
Taylor Veneer Co., A. R., Demopolis, Ala.	4	3
Thompson & Swaim Plywood Inc., Tuscaloosa, Ala.	N.R.	N.R.
Timber Products Co., Medford, Ore.	72	70
Tinsley Plywood Corp., Florence, S.C.	N.R.	N.R.
Tri-State Veneer & Plywood, Memphis, Tenn.	1.8	N.R.
Tyler Plywood Corp., Florence, S.C.	N.R.	N.R.
Union Camp Corp., Wayne, N.J.		
Chapman, Ala.	30	20
Vaughn Co., L., Warwick, R.I.	N.R.	N.R.
Warvel Products, Gillett, Wis.	N.R.	N.R.
Weber Veneer & Plywood, Shawano, Wis.	6	5
Weldon Veneer Co. Inc., Weldon, N.C.	8	N.R.
Weyerhaeuser Co., Tacoma, Wash.		
Hancock, Vt.	55	40
Whiteville Plywood Inc., Whiteville, N.C.	5	N.R.
Whittle Plywood Corp., Chatham, Va.	16	N.R.
Winnsboro Plywood Co., Winnsboro, S.C.	N.R.	N.R.
Wisconsin Laminates Inc., Pewaukee, Wis.	2.5	N.R.
Wisconsin Timber & Land, Mattoon, Wis.	3.6	N.R.

HARDWOOD PLYWOOD — CANADA

Canada Veneers Ltd., Pembroke, Ont.	12	N.R.
Canwood Lachute Ltd., Orillia, Ont.	5.2	6.4
Curvply Wood Products, Orono, Ont.	7	N.R.
Forestply Industries Inc., Kincheloe, Mich.		
Silvaplex Div., Gravenhurst, Ont.	12	N.R.
Kingswood Panels Inc., Fergus, Ont.	5.5	6
Les Placages, Tring-Jonction, Que.	39	N.R.
Levesque Plywood Ltd., Hearst, Ont.	55	52
MacMillan Bloedel Ltd., Vancouver, B.C.		
Nipigon, Ont.	135	N.R.
Newfoundland Hardwoods Ltd., Mount Pearl, Nfld.	4.5	N.R.
Normick Perron Inc., La Sarre, Que.	45	N.R.
Cochrane, Ont.	75	N.R.
St. Casimir Plywood Inc., Saint Casimir, Que.	15	N.R.
Temfor Inc., Ville Marie, Que.	15	N.R.
Vic Ply Inc., Montreal, Que.	20	N.R.
Weldwood of Canada Ltd., Vancouver, B.C.		
Surrey, B.C.	70	N.R.
Longlac, Ont.	40	38

N.R. = Not Reported.

**Million sq ft, basis as follows: structural panels, ⅜-in.; hardwood plywood, surface measure; particleboard, ¾-in.; hardboard, ⅛-in.; MDF, ¾-in.; and insulation board, ½-in.*

***Duplicate listings are included for companies which have mills both in the U.S. and Canada producing a given panel product.*

PARTICLEBOARD — U.S.

Company & Plants	Capacity*	1985 Est. Prod.
American Forest Products Co., San Francisco, Calif.		
Martell, Calif.	110	N.R.
Bohemia Inc., Eugene, Ore.	72	36
Boise Cascade Corp., Boise, Idaho		
La Grande, Ore.	181	181.9
Broyhill Furniture, Lenoir, N.C.	50	30
Ellingson Lumber Co., Baker, Ore.	20	8
Florida Plywoods Inc., Greenville, Fla.	10	6
Georgia-Pacific Corp., Atlanta, Ga.		
Vienna, Ga.	105	N.R.
Louisville, Miss.	75	N.R.
Taylorsville, Miss.	85	N.R.
Russellville, S.C.	125	126
Giles & Kendall Inc., Huntsville, Ala.	10	N.R.
Hambro Forest Products, Crescent City, Calif.	30	27
Jasper-American Mfg. Co., Henderson, Ky.	6	5
Kirby Forest Industries Inc., Houston, Texas		
Silsbee, Texas	74	66
Lane Co. Inc., The, Altavista, Va.	70	10.6
Louisiana-Pacific Corp., Portland, Ore.		
Arcata, Calif.	100	N.R.
Missoula, Mont.	98	100
Masonite Corp., Chicago, Ill.		
Stuart, Va.	50	N.R.
Nu-Woods Inc., Lenoir, N.C.	23.5	21.9
Pluswood Inc., Oshkosh, Wis.		
Pluswood Manufacturing Inc., Atikokan, Ont.	80	N.R.
Ponderosa Products, Albuquerque, N.M.	45	N.R.
Navajo, N.M.	40	N.R.
Potlatch Corp., San Francisco, Calif.		
Post Falls, Idaho	73	70
Publishers Paper, Lake Oswego, Ore.		
Philomath, Ore.	20.7	18.7
Sweet Home, Ore.	N.R.	N.R.
Rodman Industries Inc., St. Paul, Minn.		
Marinette, Wis.	22	21
Roseburg Lumber Co., Roseburg, Ore.		
Mills 1 & 2, Dillard, Ore.	310	300
Swain Industries, Evanston, Ind.	15	N.R.
Temple-Eastex Inc., Diboll, Texas	92	85
Monroeville, Ala.	100	99
Thomson, Ga.	106	105
Timber Products Co., Medford, Ore.	96	72
Union Camp Corp., Wayne, N.J.		
Franklin, Va.	85	84
U.S. Plywood Corp., Sub. of Champion International, Wilton, Conn.		
Gaylord, Mich.	200	190
Oxford, Miss.	180	150
South Boston, Va.	100	79
Vanply Inc., Many, La.	N.R.	N.R.
Weyerhaeuser Co., Tacoma, Wash.		
Adel, Ga.	75	56
Klamath Falls, Ore.	100	88
Springfield, Ore.	96	81
Marshfield, Wis.	66	62
Willamette Industries Inc., Portland, Ore.		
Lillie, La.	89	N.R.
Surepine Division, Ruston, La.	83	82.5
Duraflake Division, Albany, Ore.	170	N.R.
Korpine Division, Bend, Ore.	150	N.R.

PARTICLEBOARD — CANADA

Canpar Industries, Vancouver, B.C.		
Grand Forks, B.C.	36	25
Domtar Const. Matls., Montreal, Que.		
Huntsville, Ont.	45	N.R.
Flake Board Co. Ltd., Saint Stephen, N.B.	40	N.R.
Forex-Leroy Inc., Val D'Or, Que.	122	105.8
Levesque Plywood Ltd., Hearst, Ont.	50	43.3
MacLaren Industries Inc., James, Buckinghames, Que.		
Lac Des Iles, Que.	71	67.5
MacMillan Bloedel Ltd., Vancouver, B.C.	50	41.7
Northwest Panelboard, Sub. of Groot Logging Ltd., Smithers, B.C.	N.R.	N.R.
Panval Inc., Sayabec, Que.	116.7	112.5
Pluswood Inc., Oshkosh, Wis.		
Pluswood Manufacturing Inc., Atikokan, Ont.**	80	N.R.
Rexwood Products Ltd., New Liskeard, Ont.	35	30
Waferboard Corp. Ltd., Timmins, Ont.	36	N.R.

HARDBOARD — U.S. AND CANADA

Abitibi-Price Corp., Troy, Mich.		
Alpena, Mich.	549	549
Roaring River, N.C.	700	700
Canexel Hardboard Inc., Gatineau, Que.		
Chester, N.S.	310	N.R.
Canfor Ltd., New Westminster, B.C.		
Canadian Forest Products Ltd., New Westminster, B.C.	210	190
Celotex Corp, The, Tampa, Fla.		
Paris, Tenn.	252	N.R.
Evanite Hardboard Inc., Corvallis, Ore.	138	125
Forest Fiber Products, Forest Grove, Ore.	120	110
Georgia-Pacific Corp., Atlanta, Ga.		
Monticello, Ga.	300	N.R.
Conway, N.C.	200	175
Whiteville, N.C.	160	N.R.
Jarratt, Va.	210	196
Louisiana-Pacific Corp., Portland, Ore.		
Oroville, Calif.	170	N.R.
Masonite Corp., Chicago, Ill.		
Ukiah, Calif.	580	N.R.
Laurel, Miss.	N.R.	N.R.
Superior Fiber Products Inc., Superior, Wis.	145	140.4
Superwood Corp., Duluth, Minn.	350	320
North Little Rock, Ark.	175	124
Bemidji, Minn.	105	87
Phillips, Wis.	96	78.2
Temple-Eastex Inc., Diboll, Texas	280	256
USG Industries Inc., Chicago, Ill.		
Pilot Rock, Ore.	50	N.R.
Danville, Va.	240	N.R.
U.S. Plywood Corp., Sub. of Champion International, Wilton, Conn.		
Lebanon, Ore.	N.R.	N.R.
Catawba, S.C.	290	260
Weyerhaeuser Co., Tacoma, Wash.		
Klamath Falls, Ore.	195	N.R.

N.R. = Not Reported.

**Million sq ft, basis as follows: structural panels, 3/8-in.; hardwood plywood, surface measure; particleboard, 3/4-in.; hardboard, 1/8-in.; MDF, 3/4-in.; and insulation board, 1/2-in.*

***Duplicate listings are included for companies which have mills both in the U.S. and Canada producing a given panel product.*

1986 Panel review

WAFERBOARD — U.S.

Company & Plants	Capacity*	1985 Est. Prod.
Blandin Wood Products, Sub. of Blandin Paper Co., Grand Rapids, Minn.	275	275
Georgia-Pacific Corp., Atlanta, Ga.		
Woodland, Maine	156	130
Duckhill, Miss.	246	N.R.
Dudley, N.C.	120	120
Glade Spring, Va.	200	N.R.
Skippers, Va.	246	N.R.
Louisiana-Pacific Corp., Portland, Ore.		
Kremmling, Colo.	90	91
Montrose, Colo.	90	78
Athol, Idaho	90	87
Urania, La.	120	N.R.
Houlton, Mass.	160	164
New Limerick, Maine	N.R.	N.R.
Two Harbors, Minn.	84	30
Corrigan, Texas	140	N.R.
Dungannon, Va.	90	N.R.
Hayward, Wis.	325	322
Huber Corp., J. M., Timber & Minerals Div., Easton, Maine	128	140
Northwood Panelboard Co., Sub. of Northwood Pulp & Timber Ltd., Solway, Minn.	258.3	263.3
Oregon Strandboard Co., Brownsville, Ore.	24	16
Potlatch Corp., San Francisco, Calif.		
Bemidji, Minn.	190	179.6
Cook, Minn.	190	170
Temple-Eastex Inc., Diboll, Texas		
Claremont, N.H.	80	68
Weyerhaeuser Co., Tacoma, Wash.		
Grayling, Mich.	335	325
Elkin, N.C.	N.R.	N.R.

WAFERBOARD — CANADA

Atlantic Waferboard Corp., Chatham, N.B.	N.R.	N.R.
Grant Waferboard, Englehart, Ont.	198	N.R.
Great Lakes Forest Products Ltd., Thunder Bay, Ont.	140	120
MacMillan Bloedel Ltd., Vancouver, B.C.		
Thunder Bay, Ont.	167	141.7
Hudson Bay, Sask.	200	N.R.
Normick Perron Inc., La Sarre, Que.	125	N.R.
Panneaux Malette-Waferboard, Sub. of Waferboard Corp. Ltd., Grand'mere Que.		
Malette Waferboard, Saint Georges, Que.	158	158
Pelican Spruce Mills Ltd., Edmonton, Alta.		
Edson, Alta.	250	240
Panofor Inc., Sub. of Forex-Leroy Inc.,		
Val D'Or, Que.	166.1	166.1
Waferboard Corp. Ltd., Timmins, Ont.	83	N.R.
Weldwood of Canada Ltd., Vancouver, B.C.		
Slave Lake, Alta.	130	91
Longlac, Ont.	140	139

MEDIUM-DENSITY FIBERBOARD — U.S.

Bassett Industries, Bassett, Va.	N.R.	N.R.
Bohemia Inc., Eugene, Ore.		
Rocklin, Calif.	80	68
Celotex Corp., The, Sub. of Jim Walter Corp., Tampa, Fla.		
Marion, S.C.	70	N.R.
Sellers, S.C.	57	57
Georgia-Pacific Corp., Atlanta, Ga.		
Holly Hill, S.C.	82	N.R.
Louisiana-Pacific Corp., Portland, Ore.		
Clayton, Ala.	65	65
Eufala, Ala.	70	N.R.
Oroville, Calif.	50	N.R.
Newberry, Mich.	52.5	5
Masonite Corp., Chicago, Ill.		
Spring Hope, N.C.	70	60
Medford Corp., Medford, Ore.	88	91
Montaña De Fibra, Las Vegas, N.M.	84	42
Plum Creek Timber Co. Inc., Sub. of Burlington Northern, Seattle, Wash.		
Columbia Falls, Mont.	79	79
Weyerhaeuser Co., Tacoma, Wash.		
Moncure, N.C.	70	53
Craig, Okla.	75	61
Willamette Industries Inc., Portland, Ore.		
Malvern, Ark.	50	N.R.

INSULATION BOARD — U.S. AND CANADA

Boise Cascade Corp., Boise, Idaho		
International Falls, Mont.	200	N.R.
Building Products of Canada, Pont-Rouge, Que.	170	N.R.
Celotex Corp., The, Tampa, Fla.		
Marrero, La.	N.R.	N.R.
Domtar Construction Materials, Montreal, Que.		
Donnacona, Que.	140	135
Georgia-Pacific Corp., Atlanta, Ga.		
Jarratt, Va.	250	250
Homasote Co., Trenton, N.J.	168	94
Huebert Fiberboard Inc., Boonville, Mo.	55	54
Nordfibre Co., North Bay, Ont.	130	N.R.
Owens Corning Fiberglass, Toledo, Ohio		
Meridian, Miss.	220	N.R.
Temple-Eastex Inc., Diboll, Texas	150	145
USG Industries Inc., Chicago, Ill.		
Lisbon Falls, Maine	130	N.R
Pilot Rock, Ore.	125	N.R.

N.R. = Not Reported.

**Million sq ft, basis as follows: structural panels, 3/8-in.; hardwood plywood, surface measure; particleboard, 3/4-in.; hardboard, 1/8-in.; MDF, 3/4-in.; and insulation board, 1/2-in.*

***Duplicate listings are included for companies which have mills both in the U.S. and Canada producing a given panel product.*

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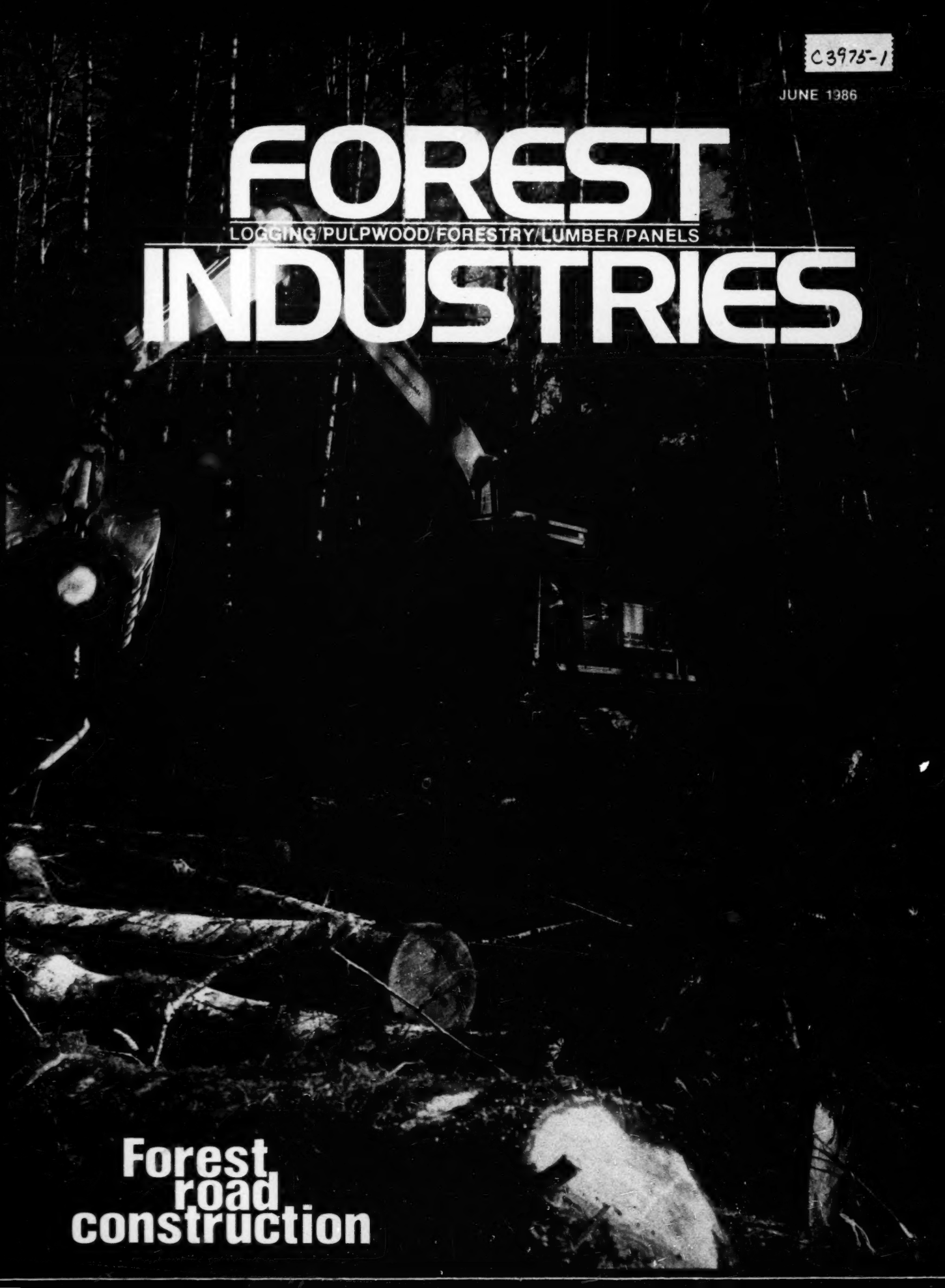
JUNE 1986

FOREST INDUSTRIES

LOGGING/PULPWOOD/FORESTRY/LUMBER/PANELS



Forest road construction

1986 Volume 113 Number 6

JUNE

Road Building

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Excavator, clam bucket useful in road building
At Miller Shingle Co. in Granite Falls, Wash., a Caterpillar 235 hydraulic excavator equipped with a rotating clam has proved to be an effective multi-purpose road building machine

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Road research aims to limit costs and resource damage
Forest roads can be valuable investments or costly problems. USFS researchers are working to improve design and construction

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Dust control compound makes fans of users
Chlorides surpass lignins, petrochemicals and even water when economics are added to performance and environmental factors

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Forest road planners evaluate ways to cut costs
International Paper Co.'s management of woodland holdings in the Northeast requires extensive road network. New products are constantly being tested

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Calcium chloride proves effective in dust control
A case study illustrates how calcium chloride treatment of a temporary haul road saved more than $200,000

Woods

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More thoughtful use of helicopters urged
Helicopter loggers say using the same yardstick for aerial and conventional yarding would open the door to more timber and lower delivered log costs

Mills

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Profit-sharing benefits hourly, managerial workers
Gregory Forest Products in Glendale, Ore., continues to update; as mills' efficiency improves, so do profits

Industry

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Panel outlook rosy for next few years
A report from the 20th International Particleboard/Composite Materials Symposium at Washington State University. A boom is predicted for structural panels

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Photo by Paul Harder

Industry looks ahead for improved profits

SAN FRANCISCO, CALIF.—Disappointing pulp and paper markets more than offset improved earnings from lumber and panels for many integrated forest products firms. As a result, first quarter profits fell—sharply in some cases—from the levels achieved a year ago. Most companies said they expect to do better in the second quarter.

Boise Cascade Corp., which reported a nearly 25% decline in earnings, saw profits from its building products operations soar 175%. Cost-cutting plus higher product prices benefited the sector, according to chairman John Fery.

Despite the bad news for some firms in the first quarter, the improving U.S. economy bodes well for the industry. Georgia-Pacific Corp. chairman Marshall Hahn observed, "Market developments during the first quarter were encouraging for the entire forest products industry."

He cited a weaker U.S. dollar, higher housing starts and improved prices for both solid-wood and paper products as good signs for industry profits. The profits pickup started in March, reported Louisiana-Pacific Corp. chairman Harry Merlo.

Some sawmillers complained that imports of Canadian lumber have held down prices and reduced earnings. The U.S. dollar's fall on overseas markets will help exports outside North America. The Canadian dollar has maintained its value of about 72 U.S. cents, so Canada will continue to enjoy a competitive edge due to currency value. ■

Forest industry sales and earnings

Companies	First quarter ($000,000) Sales	% Change 1986/85	Earnings[1]	% Change 1986/85
Abitibi-Price	C$647.4	11.4	C$17.8	-24.9
Boise Cascade	916.6	-4.3	25.0	-24.9
B.C. Forest Prod.	C$269.5	-2.9	C$4.8	-40.0
Champion Intl.	1122.3	-31.8	22.0	-49.7
Crown Zellerbach	706.2	-7.3	0.6	-96.9
Georgia-Pacific[1]	1604.0	1.5	30.0	-38.8
Great Lakes Forest Prod.	C$141.7	-4.4	-C$0.5	n.m.[4]
Hammermill Paper	457.6	6.9	11.4	44.6
International Paper	1140.0	0.9	17.3	-53.4
Louisiana-Pacific	322.6	19.0	1.4	288.6
Pope & Talbot[2]	74.1	-10.8	-0.54	n.m.[4]
Potlatch Corp.	233.3	-0.6	13.6	18.3
Scott Paper	801.4	15.1	39.1	-7.1
Temple-Inland[3]	292.7	-6.6	13.6	-37.3
Union Camp	495.0	6.8	22.0	-26.0
Westvaco	416.4	-3.0	20.3	-10.9
Weyerhaeuser	1306.7	2.4	50.0	30.1
Willamette	272.1	-5.5	7.6	-46.8

1. G-P results include change in accounting for some pension costs; 1985 earnings included $19 million pre-tax gain from land sales.
2. Pope & Talbot figures reflect operations discontinued in 1985.
3. Temple-Inland changed accounting methods for some pension costs; income includes gains on property and equipment of $4.3 million in 1986 and $700,000 in 1985.
4. n.m. = not meaningful.

Southwest Forest sells Knox Lumber stores

PHOENIX, ARIZ.—Southwest Forest Industries has completed its previously announced sale of Knox Lumber Co. retail building materials stores. Knox Home Centers Inc. purchased the subsidiary for $27.5 million.

The purchaser is owned by key members of Knox management and a group of Texas-based investors. Southwest will use proceeds of the sale to reduce its debt.

The company expects a pre-tax gain of $2.5 million.

Knox is headquartered in St. Paul, Minn.; most of its 10 stores are in the Upper Midwest.

Other recent news of mergers and acquisitions in the forest products industry:

• Columbia Forest Products of Portland, Ore., has bought Whittle Plywood Corp.'s mills in Arkansas and Virginia. The acquisition makes Columbia Forest Products the nation's largest supplier of veneer, board and lumber core hardwood plywood.

Whittle mills produce board and lumber core hardwood plywood. Columbia mills in Oregon, Vermont, Maine and North Carolina make hardwood plywood and veneer.

• Employees of the Evans Products Co. plywood plant in Aberdeen, Wash., are studying the possibility of creating an employee stock ownership plan. The 140 workers want to be ready to buy the plant to prevent its possible closure; Evans is being reorganized under Chapter 11 bankruptcy rules.

The 60-year-old plant is one of the coastal community's largest industrial employers.

• Gold Beach Plywood Inc. has reopened the former Champion International Corp. plant located in Gold Beach, Ore. ■

Western log exports jumped 11% last year

PORTLAND, ORE.—Nearly 3.4 billion bd ft of logs were exported from West Coast states last year, an 11% increase which put 1985's exports at their second-highest level ever.

Only in 1979 were log exports higher from Oregon, Washington, Alaska and California. The total then was 3.6 billion bd ft. Douglas fir accounted for slightly more than half of last year's log-export total. As usual, Japan was the biggest buyer, importing 56% of the logs. China came in second at 32%.

Oregon and Washington together exported 3 billion bd ft, 9% more than in 1984. Alaska's log exports jumped nearly 30% to 300 million bd ft, while shipments from California soared 34% to 63 million bd ft.

The value of all of the exported logs was put at $1.1 billion.

Although the strong U.S. dollar inhibited exports of finished wood products last year, lower timber prices made logs still attractive to overseas buyers. U.S. lumber exports last year dropped 6.5% to 1.5 billion bd ft. ■

C3475-1

LUMBER REVIEW

Frequent trade-ins keep equipment fleet efficient

1986 Volume 113 Number 7
JULY

Industry

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Annual Lumber Review: lumber's outlook improves, if economy stays stable
Things are looking up for the lumber industry, thanks to lower interest rates. Our Annual Lumber Review includes a listing of the leading lumber producers in the U.S. and Canada

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Lumber import dispute moves to center stage
More productive sawmills can cut lumber for less, Canadians contend. U.S. sawmillers still claim Canadians have a subsidy and want a tariff

28
Coalition gains clout on lumber import issue
According to IP's David Wang, the U.S. forest industry can point to solid achievements in Washington on the Canadian lumber controversy

Woods

24
'New equipment is faster, needs less maintenance'
Jerry Van Damme, Cave Junction, Ore., is one of those loggers who favors frequent trade-ins; nearly all the equipment he uses to keep as many as five sides going is new.

Mills

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New green end operation improves veneer yield 24%
Bruce Hardwood Flooring, a laminated hardwood flooring plant in Center, Texas, merges contrasting operations: a high-speed, high-tech veneer line and precision machining centers

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Things are looking up for the lumber industry, thanks to lower interest rates. Tax reform, tariffs and labor troubles could crimp profit potential

Lumber's outlook improves —if economy stays stable

San Francisco, California

After wandering through the wilderness of hard times for five years, North America's lumber industry might be entering the green pastures of relative prosperity. But just how good the grass turns out to be will depend mightily on conditions that sawmillers have little to say about.

For the first time in a long time, stability in economic conditions should be high on most lumber companies' wish list. Since improvement is unlikely, it could be best simply to hope that the situation doesn't deteriorate.

Is lumber tariff coming?

One major uncertainty is political. Will the United States impose a tariff on Canadian softwood lumber? Many American sawmillers fervently hope so; they see a duty as paving the road to prosperity. The tax would boost the price of Canadian lumber, pull up U.S. lumber prices, and make American lumber competitive in U.S. markets.

Canadians see the prospect of a tariff as an unmitigated disaster. Since the bulk of Canadian construction lumber is sold in the U.S., loss of a significant share of this market would cause serious problems for Canada's lumber industry. *(This issue is discussed on pp. 26-27 and pp. 28-29.)*

Another cloud on the industry's horizon is the possibility of labor strife in the Pacific Northwest and British Columbia. Union contracts in this major lumber-producing region ran out in June. Negotiations were continuing as this issue went to press, with a big gap between labor and management positions.

Labor resists concessions

Employers in the Northwest want more concessions from their workers. Union members, who agreed to lower pay and benefits to help companies get through the recession, are looking to regain some of what they have already conceded. A protracted strike could have a serious impact on some producers' profits. *(Details on contract talks are on p. 9.)*

And then there is the prospect of U.S. tax reform. The U.S. forest industry strongly opposed the House-passed version (HR 3838) because it eliminated tree-growers' favorite tax breaks. True to his word, Sen. Bob Packwood (R-Ore.) kept those breaks in his tax bill, which swept through the Senate Finance Committee and gathered steamroller-style support across the country.

Senators predicted the Senate would pass a tax-reform bill similar to the Finance Committee's before July 4.

Tax reform vs. timber

This bill would have to be reconciled with the House version. If tax breaks for timber survive, America's forest industry will breathe a collective sigh of relief. If not, the industry says it will face both higher taxes now and possible timber shortages in the future.

Last year, lumber producers thought they were going to break farther out of the long price slump than they did. In the second quarter, prices enjoyed a brief boom: they surpassed 1984 levels in mid-April, and stayed above them until mid-August. The *Random Lengths* composite lumber price peaked at $238 per 1000 bd ft, nearly $40 higher than it had been a year earlier.

But prices declined from the springtime peak, and finished out 1985 below $200—and below levels for the same period in 1984. Lumber prices started up

TABLE 1—United States Lumber Production

	Softwood Lumber Production, By Regions						
Year	Southern Pine	Douglas Fir	Western Pine	California Redwood	Other	Total Softwood Production	Total Softwood Consumption
1976	7.893	8.322	9.789	2.001	1.688	29.693	36.086
1977	8.879	8.796	10.309	2.000	1.753	31.737	40.809
1978	9.231	8.845	10.033	1.902	2.046	32.057	42.640
1979	9.283	8.427	9.780	1.818	2.124	31.432	40.608
1980	8.217	6.815	7.613	1.589	2.012	26.246	33.832
1981	8.415	6.270	7.147	1.452	1.392	24.676	32.064
1982	8.754	5.743	6.681	1.300	1.309	23.787	31.173
1983	10.181	7.934	8.488	1.580	1.543	29.726	39.742
1984	10.674	8.329	8.992	1.664	1.515	31.174	42.857
1985	10.651	7.620	9.185	1.742	1.492	30.690	43.657

Figures in recent years subject to revision.

again in March of this year, leading industry executives to start predicting a greater degree of prosperity.

Up to here in lumber

Overcapacity took the blame for weak lumber prices in 1985. Housing starts were strong at around 1.7 million—they are running at an annual rate of nearly 2 million this year—but there was more than enough lumber to meet everyone's needs.

Consumption of softwood lumber in the U.S. rose 1.9% last year to 43.66 billion bd ft. But American sawmills cut only 30.69 billion bd ft of this—1.5% less than their 1984 output.

Canadians supplied the rest, cutting 22.83 billion bd ft. This figure, which includes hardwood as well as softwood, was up 8% from 1984. British Columbia's lumber output rose 7% to 14 billion bd ft; the rest of Canada produced 8.82 billion bd ft, up 9.4% from 1984.

U.S. hardwood lumber production increased 4% to 6.47 billion bd ft, while consumption jumped 8.3% to 6.28 billion bd ft. Thus, total U.S. lumber production dipped 0.6% to 37.16 billion bd ft; consumption edged up 2.6% to 49.94 billion bd ft.

Mill efficiency soars

North American sawmillers have managed gains in productivity which range from solid to spectacular.

According to a study by the International Woodworkers of America's Vancouver, B.C., regional council, the amount of lumber produced per hour in sawmills in Oregon and Washington rose 29% from 1978 to 1984. Southern sawmills achieved similar percentage gains.

In B.C., productivity jumped 47% in the same period.

TABLE 2—Canadian Lumber Production Softwood and Hardwood, 1976-1985 (billion bd ft)

Year	B.C. Coast	B.C. Interior	Total B.C.	East of Rockies	Total Canada
1976	3.988	6.757	10.745	4.779	15.524
1977	4.499	7.539	12.038	5.629	17.667
1978	4.803	7.742	12.545	6.432	18.977
1979	4.657	7.861	12.518	6.480	18.998
1980	4.252	7.727	11.980	6.923	18.903
1981	3.458	6.966	10.424	6.473	16.897
1982	3.170	6.939	10.109	5.887	15.996
1983	4.140	8.903	13.043	7.328	20.371
1984	3.903	9.175	13.078	8.056	21.134
1985	3.996	10.007	14.003	8.822	22.825

Source: Statistics Canada

Optimism flourishes

Despite overcapacity, political problems and other possible woes, optimism seems to flourish in the lumber industry. The economic basis for further recovery seems sound.

Interest rates are expected to stay about where they are—close to 10% for home mortgages—which should keep strong homebuilding activity going through this year.

Currently, builders are starting new homes and apartments at an annual rate of nearly 2 million.

Inflation may not be dead forever, but at least it has been laid to rest for now. Thanks to the first-quarter fall in oil prices, the U.S. Consumer Price Index actually fell for two months in a row. Inflationary pressures remain in parts of the economy, especially service industries, but stable prices in manufacturing sectors (including lumber) help balance them.

The U.S. economy grew at a healthy annual rate of 3.7% in the first quarter, according to the Commerce Department. This was a big jump over the 0.7% annual rate in 1985's fourth quarter, and significantly faster than the whole-year growth rate of 2.3% last year. Wood products should benefit from continued strength in the economy.

U.S. softwood lumber output this year will increase 3.8% to 31.87 billion bd ft, predicted the Western Wood Products Assn. Consumption will go up 4% to 45.4 billion bd ft—the highest ever, WWPA added.

Softwood imports, mostly from Canada, will rise 2.5% to 14.98 billion bd ft, the association forecast. WWPA's outlook does not include the possibility of a lumber tariff.

FI's annual survey

Again this year the FOREST INDUSTRIES editorial staff gathered produc-

and Consumption, 1976-1985 (billion bd ft)

Hardwood Lumber Production, By Regions			Total Hardwood Production	Total Hardwood Consumption	Total Lumber Production	Total Lumber Consumption
Southern	Appalachian	Other				
3.037	1.173	2.217	6.427	6.441	36.120	42.527
3.073	1.211	2.417	6.701	6.890	38.438	47.699
3.258	1.233	2.540	7.031	6.997	39.088	49.637
3.462	1.263	2.589	7.314	6.939	38.746	47.547
3.341	1.221	2.553	7.115	6.272	33.361	40.104
3.374	1.237	1.641	6.252	5.855	30.928	37.919
2.061	0.602	2.398	5.061	5.098	28.848	36.271
2.245	0.785	2.614	5.644	5.397	35.370	45.139
2.701	0.811	2.704	6.216	5.795	37.390	48.652
2.894	0.763	2.817	6.474	6.283	37.164	49.940

Source: National Forest Products Assn.

tion figures from the leading lumber producers in the U.S. and Canada. Work began several months ago, when we sent questionnaires to more than 700 North American companies; many nonrespondents were contacted by telephone.

At press time we had gathered production figures from over 500 companies. The top 400 producers in our survey are listed on the following pages, ranked in order of 1985 lumber production. Of the top 400 companies, 294 are U.S. producers and 106 are Canadian.

The 294 U.S. companies listed here account for 82% of the country's total 1985 lumber production as reported by NFPA (see Table 1); the top five U.S. companies alone account for 24%.

The 106 leading Canadian producers account for 76% of the 1985 lumber production as reported by Statistics Canada (see Table 2); coincidentally, the country's top five producers also account for 24% of that volume.

We invite readers to notify us of any omissions in this year's survey. ■

Leading lumber producers, U.S. and Canada

(All lumber production figures given in board feet)
(Companies ranked according to data received by FOREST INDUSTRIES)

Company name & number of mills	Headquarters	'85 Hardwood	'85 Softwood	'85 Total	'84 Total
1. Weyerhaeuser Co. (30 mills)	Tacoma, Wash.	105,000,000	2,504,000,000	2,609,000,000	2,989,000,000
2. Louisiana-Pacific Corp. (64)	Portland, Ore.	26,000,000	1,971,000,000	1,997,000,000	2,012,000,000
3. Champion International Corp. (30)	Stamford, Conn.	20,750,000	1,816,670,000	1,837,420,000	1,840,467,000
4. Georgia-Pacific Corp. (37)	Atlanta, Ga.	192,000,000	1,492,000,000	1,684,000,000	1,650,000,000
5. Canadian Forest Products Ltd. (14)	Vancouver, B.C.	0	1,301,800,000	1,301,800,000	1,223,300,000
6. British Columbia Forest Products Ltd. (10)	Vancouver, B.C.	0	1,195,736,000	1,195,736,000	1,122,995,000
7. West Fraser Mills Ltd. (6)*	Quesnel, B.C.	0	1,047,892,000	1,047,892,000	965,594,000
8. MacMillan Bloedel Ltd. (11)	Vancouver, B.C.	0	979,000,000	979,000,000	845,000,000
9. Weldwood of Canada Ltd. (7)*	Vancouver, B.C.	0	891,000,000	912,000,000	796,000,000
10. Boise Cascade Corp. (17)	Boise, Idaho	29,373,000	772,619,000	801,992,000	801,214,000
11. International Paper Co. (11)	New York, N.Y.	0	677,000,000	677,000,000	792,000,000
12. Westar Timber Ltd. (5)**	Vancouver, B.C.	0	650,000,000	650,000,000	590,000,000
13. Sierra Pacific Industries (8)	Redding, Calif.	0	626,169,000	626,169,000	568,659,000
14. Northwood Pulp and Timber Ltd. (4)	Prince George, B.C.	0	615,071,000	615,071,000	695,419,000
15. Pope and Talbot Inc. (5)	Portland, Ore.	0	613,575,000	613,575,000	570,612,000
16. Whonnock Industries Ltd. (7)	Vancouver, B.C.	0	510,000,000	510,000,000	508,000,000
17. Simpson Timber Co. (6)	Seattle, Wash.	0	498,625,000	498,625,000	503,051,000
18. Balfour Forest Products Inc. (4)	Prince George, B.C.	0	490,000,000	490,000,000	520,000,000
19. Doman Industries Ltd. (5)	Duncan, B.C.	0	476,000,000	476,000,000	430,000,000
20. Crown Forest Industries Ltd. (7)	Vancouver, B.C.	0	444,000,000	444,000,000	411,549,000
21. Normick Perron Inc. (6)	La Sarre, Que.	0	440,109,000	440,109,000	363,430,000
22. Roseburg Forest Products (3)	Roseburg, Ore.	0	438,000,000	438,000,000	442,000,000
23. Publishers Paper Co. (4)	Sweet Home, Ore.	0	395,000,000	395,000,000	437,000,000
24. Union Camp Corp. (8)	Wayne, N.J.	27,056,000	348,025,000	375,081,000	405,730,000
25. DAW Forest Products Co. (5)	Lake Oswego, Ore.	0	362,854,000	362,854,000	147,899,000
26. Plum Creek Timber Co. Inc. (6)	Seattle, Wash.	0	360,063,000	360,063,000	357,290,000
27. Crown Zellerbach Corp. (5)	San Francisco, Calif.	0	353,100,000	353,100,000	316,800,000
28. CIP Inc., Tahsis Pacific Region (4)	Vancouver, B.C.	0	353,000,000	353,000,000	306,000,000
29. Crestbrook Forest Industries (4)	Cranbrook, B.C.	0	349,270,000	349,270,000	318,016,000
30. Willamette Industries Inc. (9)	Portland, Ore.	0	342,000,000	342,000,000	319,000,000
31. WTD Industries Inc. (9)	Portland, Ore.	5,969,000	323,244,000	329,213,000	185,594,000
32. Bohemia Inc. (6)	Eugene, Ore.	0	324,658,000	324,658,000	285,450,000
33. Southwest Forest Industries (7)	Phoenix, Ariz.	16,993,000	304,688,000	321,681,000	313,895,000
34. Federal Paper Board Co. Inc. (5)	Riegelwood, N.C.	0	321,000,000	321,000,000	182,000,000
35. RSG Forest Products Inc. (4)	Kalama, Wash.	0	305,954,512	305,954,512	253,592,294
36. Donohue Inc. (5)	Quebec, Que.	0	293,914,000	293,914,000	318,713,000
37. Woodkraft Div. of Georgia Kraft Co. (4)	Rome, Ga.	0	293,000,000	293,000,000	255,000,000
38. Gilman Paper Co. (4)	St. Marys, Ga.	0	287,000,000	287,000,000	245,064,000
39. J. D. Irving Ltd. (7)	Saint John, N.B.	0	275,000,000	275,000,000	275,000,000
40. W-I Forest Products Inc. (7)	Lake Oswego, Ore.	0	268,444,000	268,444,000	252,905,000
41. Sequoia Forest Industries (5)	Dinuba, Calif.	0	266,126,000	266,126,000	N.R.
42. Stimson Lumber Co. (3)	Portland, Ore.	0	263,670,000	263,670,000	232,410,000
43. Hammermill Paper Co. (9)	Erie, Pa.	63,010,000	190,973,000	253,983,000	266,463,000
44. Great Northern Nekoosa Corp. (4)	Stamford, Conn.	0	248,100,000	248,100,000	239,400,000
45. Finlay Forest Industries (2)	Mackenzie, B.C.	0	240,000,000	240,000,000	200,000,000
46. Pacific Lumber and Shipping Co. (3)	Seattle, Wash.	0	240,000,000	240,000,000	235,000,000
47. Slocan Forest Products Ltd. (3)	Richmond, B.C.	0	237,270,000	237,270,000	205,029,000
48. Domtar Forest Products (3)	Montreal, Que.	0	227,567,000	227,567,000	134,035,000
49. Potlatch Corp. (3)	San Francisco, Calif.	0	217,044,000	217,044,000	275,729,000
50. Evans Products Co. Ltd. (3)	Kamloops, B.C.	0	216,155,000	216,155,000	205,937,000

** Joint ventures included; ** Production figures not official; N.R. — not reported.*

Company name & number of mills	Headquarters	'85 Hardwood	'85 Softwood	'85 Total	'84 Total
51. Idaho Forest Industries Inc. (4)	Coeur d'Alene, Idaho	0	213,825,000	213,825,000	197,844,000
52. Eel River Sawmills Inc. (3)	Fortuna, Calif.	0	205,764,955	205,764,955	185,202,014
53. Rustad Bros. and Co. Ltd. (1)	Prince George, B.C.	0	204,212,772	204,212,772	193,743,375
54. Coastal Lumber Co. (15)	Weldon, N.C.	101,255,000	100,982,000	202,237,000	236,605,000
55. E. B. Eddy Forest Products Ltd. (4)	Ottawa, Ont.	0	200,000,000	200,000,000	230,000,000
56. Mountain Fir Lumber Co. Inc. (4)	Salem, Ore.	0	192,652,000	192,652,000	185,285,000
57. Saucier Forest Products Ltd. (3)	Comtois, Que.	0	185,695,000	185,695,000	202,023,000
58. Lignum Ltd. (1)	Vancouver, B.C.	0	180,000,000	180,000,000	150,000,000
59. Brunswick Pulp and Paper Co. (3)	Brunswick, Ga.	0	175,000,000	175,000,000	169,000,000
60. Materiaux Blanchet Inc. (3)	St. Pamphile, Que.	0	175,000,000	175,000,000	155,000,000
61. Manville Forest Products (2)	New York, N.Y.	0	173,000,000	173,000,000	157,000,000
62. Willamina Lumber Co. (2)	Portland, Ore.	0	172,169,000	172,169,000	157,269,000
63. Tolko Industries Ltd. (2)	Vernon, B.C.	0	166,036,000	166,036,000	155,935,000
64. Jacobson Bros. Forest Products Ltd. (1)	Williams Lake, B.C.	0	155,730,692	155,730,692	152,223,194
65. Great Lakes Forest Products Ltd. (2)	Thunder Bay, Ont.	0	151,500,000	151,500,000	161,500,000
66. Snow Mountain Pine Co. (1)	Hines, Ore.	0	150,135,979	150,135,979	135,251,009
67. Gerard Crete and Fils (4)	Proulxville, Que.	0	150,000,000	150,000,000	100,000,000
68. G. W. Martin Lumber Ltd. (7)	Harcourt, Ont.	75,000,000	75,000,000	150,000,000	80,000,000
69. Seneca Sawmill Co. (2)	Eugene, Ore.	0	146,928,000	146,928,000	142,494,000
70. Blue Ridge Lumber (1981) Ltd. (1)	Whitecourt, Alta.	0	140,000,000	140,000,000	130,000,000
71. The Pacific Lumber Co. (3)	San Francisco, Calif.	0	136,980,000	136,980,000	129,066,000
72. White Swan Lumber (4)	White Swan, Wash.	0	136,270,580	136,270,580	125,905,791
73. New South Inc. (2)	Conway, S.C.	0	136,211,000	136,211,000	125,238,000
74. Carrier Lumber Ltd. (1)	Prince George, B.C.	0	136,022,000	136,022,000	150,188,892
75. Temple-Eastex (2)	Diboll, Texas	0	134,845,000	134,845,000	127,316,000
76. Lakeland Mills Ltd. (2)	Prince George, B.C.	0	134,070,000	134,070,000	116,018,000
77. S&R Sawmills Ltd. (3)	Surrey, B.C.	0	131,200,000	131,200,000	123,565,000
78. Anthony Timberlands Inc. (3)	Bearden, Ark.	30,507,000	100,419,000	130,926,000	117,035,000
79. Curt Bean Lumber Co. Inc. (2)	Amity, Ark.	0	130,642,000	130,642,000	128,600,000
80. Federated Cooperatives Ltd. (2)	Canoe, B.C.	0	130,000,000	130,000,000	87,000,000
81. Diamond Lands Corp. (1)	Red Bluff, Calif.	0	128,000,000	128,000,000	128,000,000
82. Owens-Illinois Inc. (3)	Toledo, Ohio	6,804,370	117,233,890	124,038,260	124,058,250
83. American Forest Products Co. (2)	San Francisco, Calif.	0	121,997,000	121,997,000	118,621,000
84. Medford Corp. (2)	Medford, Ore.	0	121,837,269	121,837,269	109,400,000
85. Summit Timber Co. (1)	Darrington, Wash.	0	121,284,000	121,284,000	135,246,000
86. Harwood Products (2)	Willits, Calif.	0	120,000,000	120,000,000	115,000,000
87. Hankins Lumber Co. Inc. (3)	Grenada, Miss.	0	119,106,567	119,106,567	N.R.
88. Hanel Lumber Co. Inc. (1)	Hood River, Ore.	0	118,252,780	118,252,780	116,457,001
89. Consolidated-Bathurst Inc. (4)	Montreal, Que.	0	118,146,000	118,146,000	91,515,000
90. Kirby Forest Industries Inc. (2)	Houston, Texas	0	117,551,962	117,551,962	114,897,533
91. F. H. Stoltze Land and Lumber Co. (3)	Columbia Falls, Mont.	0	115,870,504	115,870,504	109,818,696
92. Joe N. Miles and Sons Inc. (3)	Lumberton, Miss.	0	115,000,000	115,000,000	112,000,000
93. Roseboro Lumber Co. (1)	Springfield, Ore.	0	114,778,000	114,778,000	107,707,000
94. P&M Cedar Products (6)	Stockton, Calif.	0	113,214,000	113,214,000	80,477,000
95. Kooskia Inc. (2)	Grangeville, Idaho	0	112,000,000	112,000,000	93,000,000
96. Kaibab Industries (3)	Phoenix, Ariz.	0	111,710,000	111,710,000	109,869,000
97. American Timber Co. (1)	Olney, Mont.	0	106,042,771	106,042,771	100,708,287
98. Northern Wood Preservers Inc. (2)	Thunder Bay, Ont.	0	105,000,000	105,000,000	N.R.
99. Fort Apache Timber Co. (2)	Whiteriver, Ariz.	0	104,527,548	104,527,548	108,878,391
100. Scierie des Outardes (1)	Baie Comeau, Que.	0	104,187,000	104,187,000	95,348,000
101. Abitibi-Price Inc. (2)	Toronto, Ont.	0	103,000,000	103,000,000	181,000,000
102. The Pas Lumber Co. Ltd. (1)	Prince George, B.C.	0	102,713,000	102,713,000	144,670,000
103. Revelstoke Companies Ltd. (4)	Calgary, Alta.	0	101,000,000	101,000,000	129,000,000
104. Clearwater Timber Products Ltd. (3)	Kamloops, B.C.	0	100,000,000	100,000,000	130,000,000
105. Millar Western Industries Ltd. (1)	Edmonton, Alta.	0	100,000,000	100,000,000	80,000,000
106. Portac Inc. (1)	Tacoma, Wash.	0	100,000,000	100,000,000	83,000,000
107. Sagebrush Sales Co. (2)	Albuquerque, N.M.	0	100,000,000	100,000,000	87,000,000
108. Timber Realization Co. (2)	Jackson, Miss.	0	99,244,387	99,244,387	142,092,878
109. Stone Container Corp. (3)	Orangeburg, S.C.	34,000,000	65,000,000	99,000,000	99,000,000
110. Eugene F. Burrill Lumber Co. (1)	White City, Ore.	0	98,439,000	98,439,000	89,078,000
111. Fort Hill Lumber Co. (1)	Portland, Ore.	0	94,500,000	94,500,000	93,000,000
112. TMA Forest Products (2)	Ackerman, Miss.	0	94,084,000	94,084,000	98,729,000
113. Deltic Farm and Timber Co. Inc. (2)	El Dorado, Ark.	0	94,063,308	94,063,308	94,035,328
114. Duke City Lumber Co. Inc. (5)	Albuquerque, N.M.	0	93,559,041	93,559,041	92,022,000
115. Westvaco Development Corp. (2)	Summerville, S.C.	0	92,500,000	92,500,000	89,000,000
116. Bennett Lumber Products Inc. (2)	Princeton, Idaho	0	91,960,222	91,960,222	93,934,000
117. Sun Studs Inc. (1)	Roseburg, Ore.	0	91,000,000	91,000,000	89,000,000
118. Gregory Industries Ltd. (2)	Delta, B.C.	0	90,000,000	90,000,000	72,000,000
119. La Scierie Taschereau Inc. (1)	Taschereau, Que.	0	90,000,000	90,000,000	85,000,000
120. Ainsworth Lumber Co. Ltd. (2)	Hundred Mile House, B.C.	0	89,000,000	89,000,000	83,000,000

** Joint ventures included; ** Production figures not official; N.R. = not reported.*

Company name & number of mills	Headquarters	'85 Hardwood	'85 Softwood	'85 Total	'84 Total
121. Collins Pine Co. (2)	Portland, Ore.	19,244,000	67,211,000	86,455,000	88,142,000
122. Zeidler Forest Industries Ltd. (3)	Edmonton, Alta.	0	85,580,000	85,580,000	85,580,000
123. Bowater Lumber Co. (1)	Albertville, Ala.	0	83,000,000	83,000,000	85,000,000
124. Nelson Bros. Enterprises (1)	Chuathbaluk, Alaska	0	82,000,000	82,000,000	80,000,000
125. Prince George Wood Preserving Ltd. (1)	Prince George, B.C.	0	82,000,000	82,000,000	68,000,000
126. L&M Lumber Ltd. (1)	Vanderhoof, B.C.	0	80,373,773	80,373,773	61,256,357
127. Great West Timber Ltd. (1)	Thunder Bay, Ont.	0	80,150,000	80,150,000	77,459,000
128. Bois Daaquam Inc. (2)	Daaquam, Que.	0	80,000,000	80,000,000	71,000,000
129. Manke Lumber Co. Inc. (2)	Tacoma, Wash.	0	78,497,000	78,497,000	58,801,800
130. Apollo Forest Products Ltd. (1)	Fort St. James, B.C.	0	78,190,116	78,190,116	73,918,036
131. Gregory Forest Products (1)	Glendale, Ore.	0	75,918,000	75,918,000	76,544,000
132. Saskatchewan Forest Products Corp. (5)	Prince Albert, Sask.	0	75,700,000	75,700,000	67,500,000
133. Fraser Inc. (2)	Edmundston, N.B.	0	75,000,000	75,000,000	65,000,000
134. North Pacific Lumber Co. (1)	Portland, Ore.	0	75,000,000	75,000,000	N.R.
135. Ochoco and Malheur Lumber Co. (2)	Prineville, Ore.	0	73,954,000	73,954,000	63,304,000
136. Champion Forest Products (Alberta) Ltd. (1)	Hinton, Alta.	0	73,713,000	73,713,000	72,221,000
137. Dubreuil Brothers Ltd. (1)	Dubreuilville, Ont.	0	72,656,350	72,656,350	62,049,670
138. Erickson Lumber Co. (1)	Marysville, Calif.	0	71,895,000	71,895,000	64,049,000
139. Avison Lumber Co. (4)	Molalla, Ore.	0	71,432,000	71,432,000	68,773,000
140. Brand-S Corp. (1)	Corvallis, Ore.	0	71,000,000	71,000,000	67,000,000
141. Scierie St.-Michel Inc. (1)	St.-Michel-des-Saints, Que.	0	70,000,000	70,000,000	65,000,000
142. Taylor Lumber and Treating Inc. (1)	Beaverton, Ore.	0	70,000,000	70,000,000	57,000,000
143. Vaagen Bros. Lumber (3)	Colville, Wash.	0	70,000,000	70,000,000	75,000,000
144. Industries Malbec Inc. (2)	Ste-Foy, Que.	0	69,406,000	69,406,000	73,247,000
145. Allied Forest Products Inc. (4)	Portland, Ore.	0	69,062,000	69,062,000	67,963,000
146. Scotch Lumber Co. (1)	Fulton, Ala.	0	68,000,000	68,000,000	65,000,000
147. Anderson-Tully Co. (3)	Memphis, Tenn.	67,720,797	0	67,720,797	67,720,797
148. Marys River Lumber Co. (2)	Corvallis, Ore.	0	67,640,000	67,640,000	57,120,000
149. Schmidbauer Lumber Inc. (2)	Eureka, Calif.	0	66,860,457	66,860,457	61,595,088
150. Leveseque Lumber Ltd. (1)	Hearst, Ont.	0	65,703,657	65,703,657	48,000,000
151. Brazier Forest Products of Oregon (1)	Tacoma, Wash.	0	65,000,000	65,000,000	67,000,000
152. Cipa Lumber Co. Ltd. (1)	Vancouver, B.C.	0	65,000,000	65,000,000	64,000,000
153. Merritt Bros. Lumber (1)	Priest River, Idaho	0	65,000,000	65,000,000	58,000,000
154. Nova Lumber Co. Ltd. (1)	North Vancouver, B.C.	0	65,000,000	65,000,000	61,000,000
155. Raven Lumber Ltd. (1)	Campbell River, B.C.	0	65,000,000	65,000,000	68,000,000
156. United Sawmill Ltd. (1)	Hearst, Ont.	0	65,000,000	65,000,000	N.R.
157. Harrigan Lumber Co. Inc. (1)	Monroeville, Ala.	0	64,425,000	64,425,000	61,790,000
158. Davidson Industries Inc. (1)	Mapleton, Ore.	0	64,000,000	64,000,000	54,000,000
159. Pacific Crown Timber Products (1)	Plummer, Idaho	0	63,853,640	63,853,640	55,384,669
160. Ellingson Lumber Co. (1)	Baker, Ore.	0	61,013,931	61,013,931	66,466,258
161. Modoc Lumber Co. (1)	Klamath Falls, Ore.	0	60,407,000	60,407,000	61,580,000
162. Gorman Bros. Lumber Ltd. (1)	Westbank, B.C.	0	60,244,000	60,244,000	53,519,000
163. Malette Lumber, Div. Waferboard Corp. (1)	Timmins, Ont.	0	60,000,000	60,000,000	50,000,000
164. Mill and Timber Products Ltd. (1)	Surrey, B.C.	0	60,000,000	60,000,000	60,000,000
165. Langdale Forest Products Co. (2)	Valdosta, Ga.	0	59,801,389	59,801,389	72,081,187
166. Owens and Hurst Lumber (1)	Eureka, Mont.	0	58,153,000	58,153,000	50,180,000
167. South Coast Lumber Co. (1)	Brookings, Ore.	0	57,234,000	57,234,000	N.R.
168. Scierie Leduc, Div. Reed Paper Ltd. (1)	Saint Emile, Que.	0	57,004,000	57,004,000	52,713,000
169. Roy O. Martin Lumber Co. Inc. (2)	Alexandria, La.	18,000,000	39,000,000	57,000,000	33,000,000
170. Wrangell Forest Products Ltd. (1)	Wrangell, Alaska	0	57,000,000	57,000,000	45,000,000
171. Oregon Cedar Products Co. (2)	Springfield, Ore.	0	55,000,000	55,000,000	56,000,000
172. Sierra Forest Products (1)	Terra Bella, Calif.	0	55,000,000	55,000,000	55,000,000
173. Swanson Superior Forest Products (1)	Noti, Ore.	0	55,000,000	55,000,000	46,000,000
174. Bond Brothers Sawmill (1)	Vanderhoof, B.C.	0	54,000,000	54,000,000	56,000,000
175. Kinzua Corp. (1)	Heppner, Ore.	0	53,846,000	53,846,000	50,197,000
176. Michigan-California Lumber Co. (1)	Camino, Calif.	0	52,580,000	52,580,000	27,910,000
177. Rogge Lumber Inc. (1)	Wallowa, Ore.	0	52,000,000	52,000,000	52,000,000
178. Tolleson Lumber Co. Inc. (4)	Perry, Ga.	9,000,000	43,000,000	52,000,000	52,000,000
179. D. Groot Logging (1)	Smithers, B.C.	0	51,866,000	51,866,000	55,942,000
180. Douglas Pacific Lumber Co. (1)	Bandon, Ore.	0	50,139,000	50,139,000	N.R.
181. Spalding and Son Inc. (1)	Grants Pass, Ore.	0	50,038,497	50,038,497	48,841,675
182. Aspen Planers Ltd. (1)	Merritt, B.C.	0	50,000,000	50,000,000	43,000,000
183. Continental Lumber Co. (1)	Hill City, S.D.	0	50,000,000	50,000,000	50,000,000
184. Jordan Lumber and Supply Inc. (1)	Mt. Gilead, N.C.	0	50,000,000	50,000,000	38,500,000
185. Vanport Manufacturing Inc. (1)	Boring, Ore.	0	50,000,000	50,000,000	45,753,000
186. John Day Lumber Co. (1)	John Day, Ore.	0	49,700,000	49,700,000	48,500,000
187. Gulf Lumber Co. (1)	Mobile, Ala.	0	49,646,644	49,646,644	54,897,924
188. Buchanan Lumber (1)	High Prairie, Alta.	0	49,000,000	49,000,000	57,000,000
189. Wetsel-Oviatt Lumber Co. (1)	Folsom, Calif.	0	48,520,000	48,520,000	48,386,000
190. Scierie Bearn Inc. (1)	Bearn, Que.	0	48,500,000	48,500,000	52,000,000

Company name & number of mills	Headquarters	'85 Hardwood	'85 Softwood	'85 Total	'84 Total
191. Gilchrist Timber Co. (1)	Gilchrist, Ore.	0	48,000,000	48,000,000	45,400,000
192. Shuqualak Lumber Co. Inc. (1)	Shuqualak, Miss.	0	48,000,000	48,000,000	43,000,000
193. Friesen Lumber Co. (1)	St. Helens, Ore.	0	47,300,000	47,300,000	44,500,000
194. Bisson-Bisson Inc. (1)	Matagami, Que.	0	47,000,000	47,000,000	36,000,000
195. Galloway Lumber Co. Ltd. (1)	Galloway, B.C.	0	46,522,905	46,522,905	33,311,530
196. Stuart Lake Lumber Co. Ltd. (1)	Fort St. James, B.C.	0	46,147,104	46,147,104	42,958,318
197. Arcata Redwood Co. (1)	Arcata, Calif.	0	46,000,000	46,000,000	37,000,000
198. Portbois Inc. (7)	Sherbrooke, Que.	30,000,000	15,000,000	45,000,000	35,000,000
199. Pine Products Corp. (2)	Prineville, Ore.	0	45,000,000	45,000,000	40,500,000
200. Caffall Bros. Forest Products Inc. (2)	Wilsonville, Ore.	0	44,682,052	44,682,052	43,326,331
201. Navajo Forest Products Inc. (1)	Navajo, N.M.	0	44,000,000	44,000,000	45,000,000
202. Buse Timber and Sales Inc. (1)	Everett, Wash.	0	43,900,000	43,900,000	43,590,000
203. Cascade West Forest Products (1)	Tumwater, Wash.	0	43,130,000	43,130,000	35,100,000
204. Welco Lumber Co. (2)	Marysville, Wash.	0	42,582,000	42,582,000	35,475,000
205. Chesapeake Corp. (3)	West Point, Va.	32,533,834	8,822,346	41,356,180	39,275,930
206. Pyramid Mountain Lumber Inc. (1)	Seeley Lake, Mont.	0	40,714,000	40,714,000	37,526,000
207. Superior Lumber Inc. (1)	Columbia Falls, Mont.	0	40,624,592	40,624,592	36,385,446
208. Chassé Inc. (1)	Ste-Marie Beauce, Que.	0	40,473,975	40,473,975	35,490,489
209. Bibler Brothers Inc. (1)	Russellville, Ark.	0	40,283,046	40,283,046	40,596,547
210. Paul Bunyan Lumber Co. (1)	Anderson, Calif.	0	40,144,000	40,144,000	39,915,000
211. Scierie Landrienne Inc. (1)	Landrienne, Que.	0	40,000,000	40,000,000	30,000,000
212. Snider Industries (1)	Marshall, Texas	0	40,000,000	40,000,000	40,000,000
213. Webster Industries (3)	Wayzata, Minn.	40,000,000	0	40,000,000	35,000,000
214. Superior Lumber Co. (1)	Glendale, Ore.	0	39,906,000	39,906,000	37,006,000
215. Warm Springs Forest Products Industries (1)	Warm Springs, Ore.	0	39,370,000	39,370,000	42,990,000
216. SDS Lumber Co. (1)	Bingen, Wash.	0	39,182,000	39,182,000	43,900,000
217. Mayr Bros. Logging Co. (1)	Hoquiam, Wash.	0	39,000,000	39,000,000	36,300,000
218. Layman Lumber Co. Inc. (1)	Naches, Wash.	0	38,586,000	38,586,000	38,150,000
219. C&D Lumber Co. (1)	Riddle, Ore.	0	38,372,000	38,372,000	47,442,000
220. Anthony Forest Products Co. (2)	El Dorado, Ark.	2,000,000	36,000,000	38,000,000	32,000,000
221. M. W. Smith Lumber Co. (1)	Jackson, Ala.	0	38,000,000	38,000,000	35,000,000
222. AT&N Lumber Service Inc. (3)	York, Ala.	0	37,683,578	37,683,578	19,043,573
223. Charles Ingram Lumber Co. Inc. (1)	Effingham, S.C.	0	37,620,000	37,620,000	35,046,000
224. Snider Lumber Products Co. (2)	Turlock, Calif.	0	37,417,650	37,417,650	38,095,916
225. Columbus Lumber Co. (1)	Brookhaven, Miss.	0	37,000,000	37,000,000	34,000,000
226. Rancourt Industries Ltd. (1)	St-Georges, Que.	2,000,000	35,000,000	37,000,000	30,000,000
227. Malheur Lumber Co. (1)	John Day, Ore.	0	36,625,000	36,625,000	31,000,000
228. Cone Lumber Co. (1)	Goshen, Ore.	0	36,033,000	36,033,000	26,510,000
229. A&L Lafreniere Lumber Ltd. (1)	Chapleau, Ont.	0	35,711,013	35,711,013	30,000,000
230. Lulumco Inc. (1)	Luceville, Que.	0	35,480,298	35,480,298	32,942,473
231. Cascade Lumber (1)	Cottage Grove, Ore.	0	35,368,046	35,368,046	897,699
232. Balfour Lumber Co. Inc. (1)	Thomasville, Ga.	0	35,239,000	35,239,000	38,223,000
233. Nagel Lumber Co. Inc. (2)	Land O' Lakes, Wis.	15,601,500	19,564,826	35,166,326	34,685,437
234. Forest Products Inc. (3)	Corbin, Ky.	35,000,000	0	35,000,000	27,000,000
235. Grant Lumber Co. Ltd. (1)	Elk Lake, Ont.	0	35,000,000	35,000,000	30,000,000
236. T. R. Miller Mill Co. Inc. (2)	Brewton, Ala.	0	35,000,000	35,000,000	32,000,000
237. Allen Logging Co. (1)	Forks, Wash.	0	34,418,605	34,418,605	32,945,286
238. Ramsey Lumber Co. (2)	Suffolk, Va.	0	34,000,000	34,000,000	27,300,000
239. Connor Forest Industries Inc. (4)	Wausau, Wis.	29,100,000	4,300,000	33,400,000	33,000,000
240. Seattle-Snohomish Mill Co. (1)	Snohomish, Wash.	0	32,760,000	32,760,000	29,430,000
241. Hi-Ridge Lumber Co. (1)	Yreka, Calif.	0	31,206,000	31,206,000	28,412,000
242. Big Valley Lumber Co. Inc. (1)	Bieber, Calif.	0	31,000,000	31,000,000	28,000,000
243. Guy Bennett Lumber Co. (1)	Clarkston, Wash.	0	30,621,938	30,621,938	33,000,000
244. Kimberly-Clark Corp. (1)	Coosa Pines, Ala.	0	30,255,000	30,255,000	31,200,000
245. Griffin Lumber Co. (2)	Cordele, Ga.	0	30,013,000	30,013,000	30,000,000
246. Madawaska Lumber (3)	Carleton, Que.	0	30,000,000	30,000,000	30,000,000
247. Metcalf Lumber Co. Inc. (1)	Thomasville, Ga.	0	30,000,000	30,000,000	28,000,000
248. North Florida Lumber Co. (1)	Graceville, Fla.	0	30,000,000	30,000,000	31,000,000
249. C. M. Tucker Lumber Corp. (1)	Pageland, S.C.	0	30,000,000	30,000,000	30,000,000
250. Walker Bros. Lumber Co. (1)	Huntsville, Texas	0	30,000,000	30,000,000	25,000,000
251. Empire Lumber Co. (1)	Kamiah, Idaho	0	29,838,526	29,838,526	27,499,587
252. Commonwealth Plywood Co. Ltd. (2)	Ste. Therese, Que.	16,550,000	12,500,000	29,050,000	N.R.
253. P. E. Barnes Lumber Co. (4)	Hamburg, Ark.	28,999,030	0	28,999,030	35,990,785
254. Kitchens Brothers Mfg. Co. (3)	Utica, Miss.	28,671,000	0	28,671,000	33,533,000
255. Webco Forest Products Inc. (1)	Grants Pass, Ore.	0	28,541,000	28,541,000	19,347,000
256. H. W. Culp Lumber Co. (1)	New London, N.C.	0	28,000,000	28,000,000	21,000,000
257. Rajala Companies (4)	Deer River, Minn.	18,000,000	10,000,000	28,000,000	24,000,000
258. Marcel Lauzon Inc. (1)	East Hereford, Que.	0	27,703,789	27,703,789	29,409,094
259. J. E. Martel and Sons Lumber Ltd. (1)	Chapleau, Ont.	0	27,000,000	27,000,000	25,000,000
260. H. V. and T. G. Thompson Lumber (1)	Alley, Ga.	0	27,000,000	27,000,000	26,500,000

Company name & number of mills	Headquarters	'85 Hardwood	'85 Softwood	'85 Total	'84 Total
261. Weiers Sawmill Ltd. (1)	Quesnel, B.C.	0	27,000,000	27,000,000	70,000,000
262. Gray Lumber Co. (1)	Waverly, Va.	0	26,915,130	26,915,130	28,119,392
263. Moose River Lumber Co. Inc. (1)	Jackman, Maine	0	26,553,360	26,553,360	23,299,248
264. Varn Wood Products (1)	Hoboken, Ga.	0	26,535,724	26,535,724	25,883,904
265. Linden Lumber Co. (1)	Linden, Ala.	26,000,000	0	26,000,000	25,000,000
266. Vanderwell Contractors (1971) Ltd. (1)	Slave Lake, Alta.	0	26,000,000	26,000,000	24,000,000
267. Custer Lumber Co. (1)	Custer, S.D.	0	25,883,254	25,883,254	20,759,000
268. St. Johns Forest Products Co. (1)	Portland, Ore.	0	25,744,297	25,744,297	24,030,952
269. Collum's Lumber Mill Inc. (1)	Allendale, S.C.	0	25,500,000	25,500,000	18,951,417
270. Averitt Lumber Co. (3)	Clarksville, Tenn.	25,000,000	0	25,000,000	22,000,000
271. Calandor Pine Corp. (1)	Alturas, Calif.	0	25,000,000	25,000,000	20,000,000
272. Lytton Lumber Ltd. (1)	Lytton, B.C.	0	25,000,000	25,000,000	25,000,000
273. Cascade Locks Lumber Co. (1)	Cascade Locks, Ore.	0	24,073,000	24,073,000	23,799,000
274. Norby Lumber Co. Inc. (1)	Madera, Calif.	0	24,041,000	24,041,000	24,958,000
275. Broughton Lumber Co. (1)	Underwood, Wash.	0	24,000,000	24,000,000	22,000,000
276. Cedar Lumber Inc. (1)	Mill City, Ore.	0	23,626,635	23,626,635	20,000,000
277. Doyle Lumber Inc. (1)	Martinsville, Va.	3,071,229	20,006,263	23,077,492	21,578,767
278. Keller Lumber Co. (1)	Roseburg, Ore.	0	23,000,000	23,000,000	18,000,000
279. M. C. Dixon Lumber Co. Inc. (1)	Eufaula, Ala.	0	22,787,558	22,787,558	26,176,807
280. Chiloquin Forest Products (1)	Chiloquin, Ore.	0	22,786,077	22,786,077	21,101,397
281. Neiman Sawmills Inc. (2)	Hulett, Wyo.	0	22,590,897	22,590,897	21,119,722
282. J. V. Wells Inc. (1)	Sharptown, Md.	0	22,453,010	22,453,010	19,216,422
283. Crane Mills (1)	Corning, Calif.	0	22,037,760	22,037,760	23,927,529
284. Cersosimo Lumber Co. Inc. (3)	Brattleboro, Vt.	10,000,000	12,000,000	22,000,000	17,000,000
285. Cuddeback Lumber Co. (1)	Eugene, Ore.	0	22,000,000	22,000,000	21,000,000
286. Hazlehurst Lumber Co. Inc. (1)	Hazlehurst, Miss.	0	22,000,000	22,000,000	22,000,000
287. Hull-Oakes Lumber Co. (1)	Monroe, Ore.	0	22,000,000	22,000,000	21,567,225
288. Manfor Ltd. (1)	The Pas, Man.	0	22,000,000	22,000,000	24,000,000
289. Cambria Forest Industries (1)	Newcastle, Wyo.	0	21,850,000	21,850,000	20,745,000
290. Tangfeldt Wood Products (1)	Eugene, Ore.	0	21,700,000	21,700,000	22,300,000
291. Juniper Lumber Co. Ltd. (1)	Juniper, N.B.	0	21,483,000	21,483,000	40,369,000
292. Beaver Lumber Co. Inc. (1)	Clatskanie, Ore.	0	21,347,168	21,347,168	25,869,923
293. Olon Belcher Lumber Co. Inc. (1)	Brent, Ala.	0	21,000,000	21,000,000	18,000,000
294. J. H. Huscroft Ltd. (1)	Erickson, B.C.	0	21,000,000	21,000,000	N.R.
295. Spray Lake Sawmills (1980) Ltd. (1)	Cochrane, Alta.	0	21,000,000	21,000,000	20,000,000
296. Paxport Mills Inc. (1)	Tacoma, Wash.	1,407,220	19,325,778	20,732,998	19,488,914
297. Clermond Hamel Ltd. (1)	Saint Ephrem, Que.	2,221,000	18,263,000	20,484,000	18,407,000
298. Beadles Lumber Co. (1)	Moultrie, Ga.	0	20,000,000	20,000,000	19,300,000
299. Guy C. Lee Manufacturing Co. (2)	Smithfield, N.C.	4,000,000	16,000,000	20,000,000	N.R.
300. Loper Lumber, Div. Gulf States Paper (1)	Tuscaloosa, Ala.	0	20,000,000	20,000,000	20,000,000
301. Sam Mabry Lumber Co. (1)	Liberty, Miss.	0	20,000,000	20,000,000	19,000,000
302. Cliffs Forest Products Co. (1)	Iron Mountain, Mich.	19,305,452	489,865	19,795,317	27,611,217
303. Consolidated Pine Inc. (1)	Prineville, Ore.	0	19,765,590	19,765,590	17,688,980
304. Almond Bros. Lumber Co. (1)	Coushatta, La.	0	19,584,745	19,584,745	13,578,732
305. McShan Lumber Co. Inc. (1)	McShan, Ala.	0	19,500,000	19,500,000	19,000,000
306. Missoula White Pine Sash Co. (1)	Missoula, Mont.	0	18,856,000	18,856,000	16,576,000
307. Sundance Lumber Co. Inc. (1)	Springfield, Ore.	0	18,748,102	18,748,102	19,306,038
308. Flippo Lumber Corp. (1)	Doswell, Va.	0	18,334,925	18,334,925	18,231,095
309. Lumbee Timber, Div. Sinclair Lumber (1)	Laurinburg, N.C.	0	18,000,000	18,000,000	12,500,000
310. Northland Forest Products Ltd. (1)	Ft. McMurray, Alta.	0	18,000,000	18,000,000	13,000,000
311. Zip-O Lumber Co. (1)	Eugene, Ore.	0	18,000,000	18,000,000	20,000,000
312. McRae Mills Ltd. (2)	Whitney, Ont.	15,020,000	2,800,000	17,820,000	11,820,000
313. William Milne and Sons Ltd. (1)	Temagami, Ont.	93,000	17,545,000	17,638,000	19,214,000
314. Herbert Lumber Co. (1)	Riddle, Ore.	0	17,598,000	17,598,000	16,653,000
315. Newman Lumber Co. Inc. (1)	Woodsville, N.H.	0	17,500,000	17,500,000	17,500,000
316. Pate Lumber Co. Inc. (1)	Carrollton, Ala.	0	17,500,000	17,500,000	17,500,000
317. Mt. Adams Timber Products (1)	Bingen, Wash.	0	17,401,000	17,401,000	14,370,000
318. Arkansas Oak Flooring Co. (2)	Pine Bluff, Ark.	17,039,947	0	17,039,947	16,818,407
319. James MacLaren Industries Inc. (1)	Thurso, Que.	16,667,000	343,000	17,010,000	15,663,000
320. AJD Forest Products Inc. (1)	Grayling, Mich.	12,000,000	5,000,000	17,000,000	16,000,000
321. Seaman Timber Co. Inc. (3)	Montevallo, Ala.	15,000,000	2,000,000	17,000,000	16,250,000
322. Spring Creek Forest Products Inc. (1)	Judith Gap, Mont.	0	17,000,000	17,000,000	16,000,000
323. Big Creek Lumber Co. (1)	Davenport, Calif.	0	16,891,000	16,891,000	18,243,000
324. Pine Mountain Lumber Co. (1)	Yreka, Calif.	88,000	16,730,000	16,818,000	17,678,000
325. T&S Hardwoods Inc. (1)	Milledgeville, Ga.	16,600,000	0	16,600,000	15,900,000
326. Burt Lumber Co. (1)	Washington, Ga.	0	16,500,000	16,500,000	17,607,724
327. Chesterfield Lumber Co. Inc. (1)	Darlington, S.C.	0	16,500,000	16,500,000	14,900,000
328. Timberline Lumber Inc. (1)	Weippe, Idaho	0	16,164,911	16,164,911	14,695,133
329. Buddy Bean Lumber Co. (1)	Hot Springs, Ark.	0	16,000,000	16,000,000	12,000,000
330. Harris Pine Mills (1)	Pendleton, Ore.	0	15,999,192	15,999,192	14,190,049

Company name & number of mills	Headquarters	'85 Hardwood	'85 Softwood	'85 Total	'84 Total
331. Kimball International Inc. (3)	Jasper, Ind.	15,900,999	0	15,900,999	16,077,065
332. Lakeview Lumber Products Co. (1)	Lakeview, Ore.	0	15,809,235	15,809,235	16,728,833
333. Monticello Hardwood Inc. (4)	Monticello, Miss.	15,800,000	0	15,800,000	16,000,000
334. American Box Co. (2)	Greenville, Miss.	15,157,950	0	15,157,950	14,962,967
335. Daniels Lumber Inc. (1)	Lake City, Fla.	0	15,000,000	15,000,000	13,000,000
336. Dickert Lumber Co. Inc. (1)	Newberry, S.C.	0	15,000,000	15,000,000	14,500,000
337. Elliott Sawmilling Co. Inc. (1)	Estill, S.C.	0	15,000,000	15,000,000	14,366,602
338. Forest Grove Lumber Co. (1)	Forest Grove, Ore.	0	15,000,000	15,000,000	12,500,000
339. Les Scieries St.-Felicien Inc. (1)	St.-Felicien, Que.	0	15,000,000	15,000,000	13,500,000
340. Timco Inc. (3)	Ctr. Barnstead, N.H.	0	15,000,000	15,000,000	18,000,000
341. Flodin Lumber and Mfg. Co. (1)	Plains, Mont.	0	14,764,000	14,764,000	14,648,000
342. Perry Lumber Co. Inc. (1)	Perry, Fla.	0	14,700,000	14,700,000	12,600,000
343. Brabham-Parker Lumber Inc. (1)	Willis, Texas	0	14,400,000	14,400,000	12,800,000
344. North American Forest Products Ltd. (1)	St.-Quentin, N.B.	0	14,300,000	14,300,000	10,700,000
345. Hubert Moore Lumber Co. Inc. (1)	Alapaha, Ga.	0	14,261,307	14,261,307	12,098,348
346. Wiergate Lumber Co. Inc. (1)	Wiergate, Texas	0	14,250,000	14,240,000	13,500,000
347. J. W. Jones Lumber Co. Inc. (1)	Elizabeth City, N.C.	3,332,959	10,815,016	14,147,975	14,050,049
348. Barnes Manufacturing Co. (1)	Kenbridge, Va.	7,152,344	6,871,860	14,024,204	13,073,430
349. Atchley Lumber and Supply Inc. (1)	Trinity, Texas	0	14,000,000	14,000,000	15,000,000
350. Menominee Tribal Enterprises (1)	Neopit, Wis.	6,000,000	8,000,000	14,000,000	16,000,000
351. Fred Netterville Lumber Co. (1)	Woodville, Miss.	14,000,000	0	14,000,000	12,000,000
352. Ocala Lumber Sales Co. (1)	Ocala, Fla.	0	14,000,000	14,000,000	12,500,000
353. T. F. Evans Lumber Co. Inc. (2)	Fulton, Miss.	0	13,503,493	13,503,493	12,826,475
354. Hutchins Lumber Inc. (1)	Weippe, Idaho	0	13,277,472	13,277,472	13,471,966
355. Canyon Lumber Co. Inc. (1)	Everett, Wash.	0	13,000,000	13,000,000	12,000,000
356. Parton Lumber Co. (1)	Rutherfordton, N.C.	6,000,000	7,000,000	13,000,000	11,500,000
357. E. Sondheimer Co. (1)	Sondheimer, La.	13,000,000	0	13,000,000	12,000,000
358. Tigerton Lumber Co. (2)	Tigerton, Wis.	13,000,000	0	13,000,000	13,000,000
359. Great Western Lumber Co. (1)	Everson, Wash.	1,489,000	11,217,000	12,706,000	10,269,000
360. Vaughn Lumber Co. (1)	Forsyth, Ga.	700,000	12,000,000	12,700,000	11,300,000
361. Greensboro Lumber Co. (1)	Greensboro, Ga.	0	12,519,436	12,519,436	11,461,128
362. Conrad Poulin and Fils Ltd. (1)	Montmagny, Que.	0	12,500,000	12,500,000	13,200,000
363. H. S. Hofler and Sons Lumber (1)	Sunbury, N.C.	0	12,478,844	12,478,844	12,078,382
364. Mitkof Lumber Co. Inc. (1)	Petersburg, Alaska	0	12,400,000	12,400,000	N.R.
365. Big Pine Lumber Co. Inc. (1)	Waldron, Ark.	0	12,250,000	12,250,000	9,400,000
366. D. B. Arant Inc. (1)	New Bern, N.C.	0	12,076,343	12,076,343	12,567,524
367. Albert R. Lavalley Inc. (1)	Sanford, Maine	15,000	12,000,000	12,015,000	11,500,000
368. Blasen and Blasen Lumber Corp. (1)	Portland, Ore.	0	12,000,000	12,000,000	12,000,000
369. Leo Cauchon Ltd. (1)	Chateau-Richer, Que.	0	12,000,000	12,000,000	N.R.
370. H. J. Crabbe and Sons Ltd. (1)	Bristol, N.B.	0	12,000,000	12,000,000	N.R.
371. Fiest Hardwoods Inc. (1)	Newton Falls, Ohio	12,000,000	0	12,000,000	15,000,000
372. Fleming Lumber (1)	Crestview, Fla.	0	12,000,000	12,000,000	12,000,000
373. E. W. Godwin's Sons Inc. (1)	Wallace, N.C.	0	12,000,000	12,000,000	11,500,000
374. J&J Logging and Lumber Corp. (3)	Dover Plains, N.Y.	11,500,000	500,000	12,000,000	N.R.
375. Pitt Timber Ltd. (1)	Port Coquitlam, B.C.	0	12,000,000	12,000,000	13,100,000
376. Sawtooth Forest Products (1)	Mt. Home, Idaho	0	12,000,000	12,000,000	N.R.
377. Uwharrie Lumber Co. (1)	Troy, N.C.	12,000,000	0	12,000,000	6,000,000
378. Woodlands Improvement Corp. (1)	Fort Kent, Maine	0	12,000,000	12,000,000	15,000,000
379. C&S Lumber Co. (1)	Carthage, Ark.	11,959,526	0	11,959,526	10,142,598
380. Reed and Sons Hardwood Inc. (1)	Monroe, La.	11,500,000	0	11,500,000	10,750,000
381. East Texas Forest Products (1)	Jefferson, Texas	0	11,429,022	11,429,022	12,820,811
382. Coulbourn Lumber Co. (1)	Windsor, N.C.	122,000	11,178,993	11,300,993	10,810,683
383. Godfrey Lumber (1)	Statesville, N.C.	1,000,000	10,000,000	11,000,000	10,000,000
384. Warren and Griffin Lumber Co. (1)	Williams, S.C.	0	11,000,000	11,000,000	10,000,000
385. Ray White Lumber Co. (1)	Sparkman, Ark.	1,000,000	10,000,000	11,000,000	11,000,000
386. Southland Forest Products Inc. (1)	Kershaw, S.C.	9,880,000	1,100,000	10,980,000	9,170,000
387. East Perry Lumber Co. (1)	Frohna, Mo.	10,898,662	0	10,898,662	11,218,666
388. Umphlett Lumber Co. Inc. (1)	Moncks Corner, S.C.	0	10,740,000	10,740,000	11,946,000
389. Toney Lumber Co. Inc. (1)	Louisburg, N.C.	0	10,516,968	10,516,968	10,394,960
390. Bellerive-Ka'N'Enda Wood Products (1)	Mont-Laurier, Que.	10,500,000	0	10,500,000	8,800,000
391. A. B. Carroll Lumber Co. Inc. (1)	Hurtsboro, Ala.	0	10,500,000	10,500,000	12,500,000
392. B&B Lumber Co. Inc. (1)	Jamesville, N.Y.	10,422,362	0	10,422,362	N.R.
393. G&S Lumber Co. Inc. (1)	Nacogdoches, Texas	10,215,988	0	10,215,988	9,587,526
394. Anderson Manufacturing Co. (1)	Tenaha, Texas	40,000	10,000,000	10,040,000	10,025,000
395. C. E. Elder Lumber Co. (1)	Petersburg, Va.	0	10,000,000	10,000,000	12,000,000
396. Hanna Manufacturing Co. (1)	Winnfield, La.	10,000,000	0	10,000,000	16,000,000
397. Khalsa Enterprises Ltd. (1)	Williams Lake, B.C.	0	10,000,000	10,000,000	12,000,000
398. Tennessee Timber Products (1)	Waverly, Tenn.	10,000,000	0	10,000,000	7,500,000
399. Walton Lumber Co. Inc. (1)	Mineral, Va.	80,000	9,920,000	10,000,000	9,600,000
400. Williams Lumber Co. Inc. (1)	Roper, N.C.	10,000,000	0	10,000,000	10,000,000

More productive sawmills can cut lumber for less, Canadians contend. U.S. sawmillers still claim a subsidy helps, and are trying again to get a tariff

Lumber import dispute moves to center stage

By Ted Blackman

Washington, D.C.

The U.S. Coalition for Fair Lumber Imports has moved its battle for a tariff on Canadian softwood lumber back to center stage in Washington. The group of lumber producers' trade associations and individual companies filed an unfair-trade practices complaint against imports of Canadian lumber on May 19.

The coalition wants the U.S. trade agencies to declare that Canada's low prices for public timber constitute a 27% government subsidy for the lumber industry. The International Trade Administration (ITA) will consider this question; the International Trade Commission (ITC) will consider whether imports have injured U.S. lumber firms.

The agencies will issue a preliminary ruling by July 3 on whether the coalition's complaint is justified. The Commerce Department's final ruling is due by Aug. 12. A 27% tariff would add about $54 to the $200 price of 1000 bd ft of spruce-pine-fir 2x4s.

The coalition's petition brings the lumber-import issue back to the federal bureaucracy. In its determination of whether a subsidy enables Canadians to undersell American mills in the U.S., the ITA will again encounter Canadians who contend this is not the case.

Canada's claim: efficiency

Essentially, Canadian sawmillers say that they cut lumber for less because their mills are more productive—not because they benefit from artificially cheap timber. Productivity figures have been traded back and forth several times in the past three years. The Western Canadian Regional Council of the International Woodworkers of America union has come forth with its own study of the issue.

The IWA comparison of similar U.S. and Canadian mills reveals far higher productivity in Canada, especially in the large, high-tech mills in British Columbia's Interior. The study is discussed in detail below.

U.S. lumbermen dispute this conclusion. For more on this view, see the accompanying interview with David Wang on pp. 28-29.

Canadians contend that their 72¢ dollar and U.S. consumer preference for Canadian species account for most of their robust lumber sales in the U.S. Canada has about a 32% share of the U.S. softwood lumber market.

Refighting the battle

For Canada, the new wrangling over lumber is a bitter pill. Three years ago, the ITA ruled that Canada does not subsidize its lumber industry with cheap timber. The ruling allowed continued duty-free imports of Canadian lumber. However, U.S. sawmillers remain convinced that a subsidy exists and have exerted considerable pressure on the Reagan Administration to get relief.

U.S. and Canadian government officials met five times this year on the lumber issue. Separately, the two countries started talks May 22 to explore freer trade for a broad range of products. Prime Minister Brian Mulroney wants lumber to be part of this process. Some key U.S. senators agree, but Sen. Bob Packwood (R-Ore.) said that President Reagan promised to resolve the lumber issue separately.

Coalition members, frustrated with the lumber talks, don't want the issue included in the free trade negotiations. U.S. sawmillers contend that they cannot wait up to four years for relief. They want countervailing duties—taxes added to imported goods which are deemed to receive government subsidies in the country where they are made.

Coalition spokesman William Lange said Canada can take as much of the U.S. market as it wishes (by underselling U.S. producers). Imports will "wipe out the whole industry," he said.

U.S. lumber producers claim that Canada's public timber—nearly all of the country's fiber supply—is priced far below market value. Canadians deny this. On a couple of occasions, most recently in 1983, U.S. trade officials agreed with Canada.

Last year, the ITC took up the stumpage issue again. In October, it reported that gross delivered logs in Canada averaged about 18% less per 1000 bd ft of lumber produced than in the U.S. The agency also reported that Canadian sawmills are far more productive than American mills. Because of greater efficiencies, Canadian mills can maintain unit production costs—conversion costs per 1000 bd ft—at competitive levels.

This finding raised a new storm in the U.S. Three months later, the ITC toned down its productivity ratings by saying it had not compared mills properly. When similar types of sawmills are compared, the agency said, the American disadvantage in productivity shrinks considerably (see FOREST INDUSTRIES, March 1986, p. 9).

In neither report did the ITC consider whether Canada subsidizes its lumber producers.

Not long after the ITC's December revision of its October report, the IWA updated its own productivity report.

Doug Smyth, the union's research director in Vancouver, B.C., pointed to "serious calculation errors" in the December ITC study which "distort the differential in calculated productivity between softwood sawmills in British Columbia and in Oregon, Washington, Idaho and Montana."

Calculation errors claimed

The most serious of these errors involved estimates of the number of employees engaged in chip production, Smyth said. It was based on the ratio of chip shipments to the total value of lumber and chips produced, not to the actual number of people engaged in whole-log chipping.

Accountants and productivity experts know that this method "literally invalidates the meaning and measurement of productivity in the sawmilling industry," the IWA said.

The IWA contends that if the ITC had actually carried out the B.C.-U.S.

West comparison on an output-per-hour-worked basis instead of annual-output-per-employee, B.C. sawmill productivity was still 28% higher in 1982.

The IWA followed up with its own survey of 124 Northwest sawmills and 108 in B.C. Gathering data from government sources as well, the IWA found that "both surveys confirm that productivity in British Columbia is substantially higher than the average for four western states." This is true even when the comparison is limited to mills cutting only studs and dimension lumber.

In its study, the IWA admitted that direct comparisons among sawmills in different regions are hard to make. A major complicating factor is the wide variety of lumber products. In general, for example, cutting 1-in. boards takes more labor per 1000 bd ft than sawing 2-in. dimension lumber. In addition, lumber recovery is lower with boards, so log costs are higher per 1000 bd ft.

The B.C. Interior, with its uniform small logs, specializes in "high-speed automated processing of timber into relatively homogeneous products." More than 90% of the region's output is dimension and studs, the IWA noted. Since the return on boards is much higher, stumpage for ponderosa pine should be higher than for spruce and lodgepole pine converted to dimension and studs. B.C. has negligible stands of ponderosa.

Output/hr by production and related workers, U.S. and Canada softwood industry by region, 1978 to 1984 (bd ft/hr worked)

	1978	1984	% change
British Columbia	209.5	308.7	47.4
Coast	181.0	243.0	34.3
Interior	232.1	333.4	43.6
Northern Interior	315.7	426.7	35.2
Oregon and Washington	172.9	222.2	28.5
Idaho and Montana	145.4	182.6	25.6
Washington, Oregon Idaho and Montana	166.1	212.0	27.6
U.S. South	101.6	131.5	29.4
United States	127.6	154.3	20.7
Canada	174.1	248.9	43.0

South, B.C. mills similar

The South, with 85% of lumber output in these products, is more similar to Interior B.C. than either region is to U.S. and B.C. Pacific Coast operations. As a rule, the B.C. Interior sawmills are much larger and more modern than their southern counterparts. The enormous difference in mill size permits B.C. mills to achieve economies of scale not possible in smaller U.S. mills.

Northern B.C. sawmills cut 250% as much lumber a year as the average stud-dimension mill in the West.

In the B.C. Interior, the average worker produced 333 bd ft an hour in 1984. In the north, the most efficient mills turned out 506 bd ft per hour—well above the 260-bd-ft average for efficient mills sampled in the South.

Pacific Coast mills were closer in hourly production on both sides of the border: 243 bd ft an hour in B.C. and 222 bd ft in Oregon-Washington. Between 1978 and 1984, productivity in B.C. sawmills jumped 47%, compared to a 29% increase in Oregon-Washington. But by 1985, sawmill employment had fallen 25% in both western regions.

Higher productivity allows B.C. sawmills to cut cheaper lumber. Efficient mills can spread the hourly costs of labor, materials, energy and other conversion costs over a larger output. Thus, costs per 1000 bd ft of lumber produced are substantially lower than hourly costs would indicate. Lower costs, the IWA argues, not a subsidy, enables Canadians to undersell Americans.

This is why B.C. Interior sawmills can pay total hourly wages and benefits which are double the average in the U.S. South, yet still keep unit labor costs well below the southern average. The average B.C. sawmill worker now earns about US$16.50 an hour—well above the US$8 average in the South.

The IWA concludes: "The narrow differential which currently exists between unit labor costs in the B.C. Interior and efficient mills in the South—despite much higher hourly compensation in British Columbia—can be explained only by the large difference in productivity in the two regions. Stumpage does not enter into the accounting definition of either labor or other manufacturing costs, or into the harvesting component of delivered wood costs."

The dominance of the pulp and paper industry in the South affects sawmill productivity there. Large-scale chipping of low-quality logs in the South severely reduces output of lumber per hour worked, the IWA concluded, especially when demand for pulp is strong. This situation can force southern sawmills to shift from lumber to chip production.

The larger volume of chips produced, as well as higher prices per bone dry unit in the South, produces a much higher chip credit to offset lumber production costs. These credits substantially reduce net delivered wood costs for southern sawmills. The IWA calculated that the average sawmill in the South received chip credits of $62 per 1000 bd ft of lumber produced in 1984. In Interior B.C., the comparable figure was US$20.

Factoring in this credit results in a delivered log cost for lumber production which is about the same in both regions, the union contends.

In its report last year, the ITC said the average cost in 1984 for delivered logs in the U.S. was $156 per 1000 bd ft. Canadian mills paid an average of US$128, or 18% less. This sum represents actual gross costs for the whole log, including the amount of fiber consumed in chip production.

To get the cost of fiber used to make lumber, the IWA subtracted revenues for chips. This is how the union figured the wood actually transformed into lumber costs essentially the same in Interior B.C. and the South. The cost came to $88 per 1000 bd ft in the South and US$87 in Interior B.C. in 1984, despite the fact that gross wood costs in the South were $43 more per 1000 bd ft. The cost of wood diverted to chip production accounted for the difference.

Figures vs. politics?

This is the kind of complex material U.S. trade officials will have to deal with when they consider the Coalition for Fair Lumber Imports' countervailing duty petition. The coalition will offer a similar stack of figures, and Canadians announced they will prepare "a strong case" against duties.

To qualify for a countervailing duty, the coalition must convince the ITA and ITC that Canadian lumber benefits from a government subsidy, and that imports have injured the U.S. lumber industry. Failure to win both sides of the argument could kill the petition.

With Congressional elections five months off, the ITA and ITC will have to contend with political pressure as well as statistics. The U.S. lumber industry has gotten the administration's attention, and will muster all the clout it can to achieve its goals. ■

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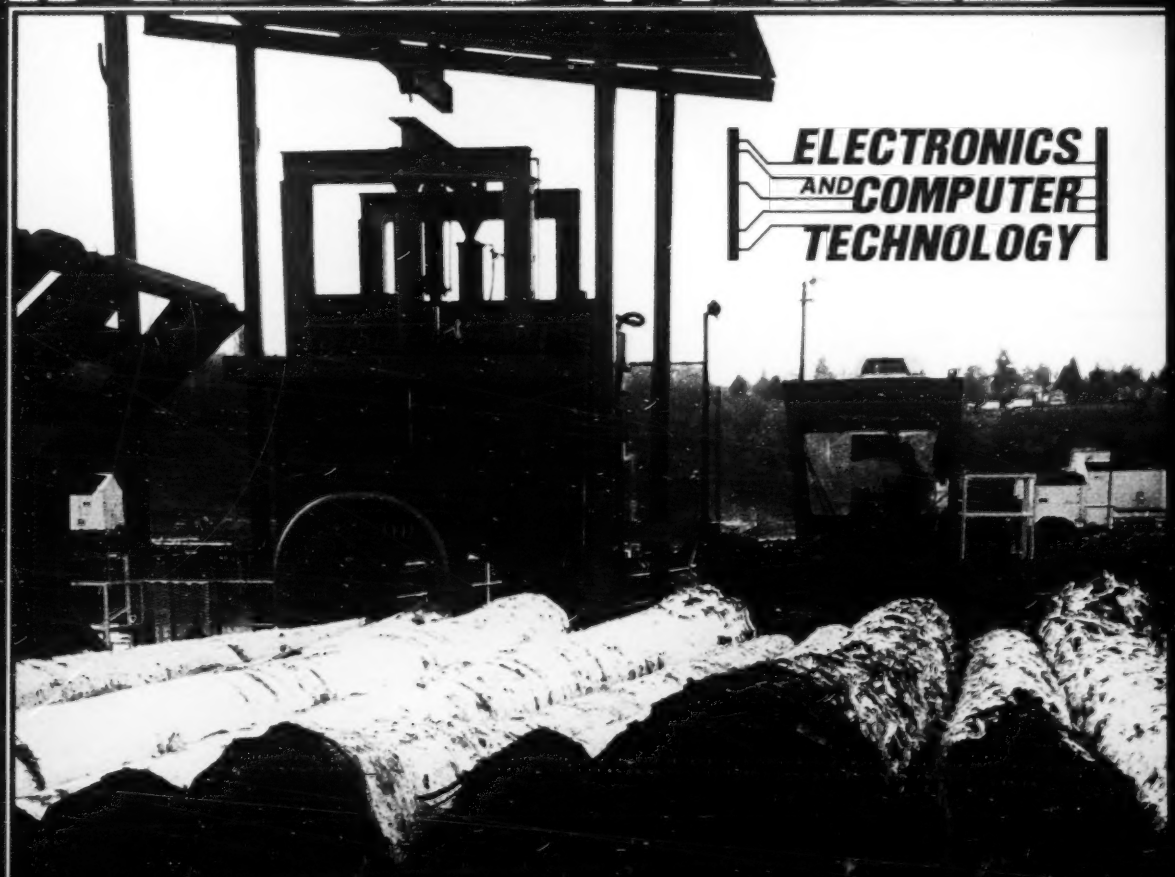
FOREST INDUSTRIES

LOGGING/PULPWOOD/FORESTRY/LUMBER/PANELS



$24-million program paved path to use of small logs

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For Simpson Timber Co., Shelton, Wash., the switch to second-growth timber is over. The change was neither easy nor cheap, and it happened earlier than expected. But it worked

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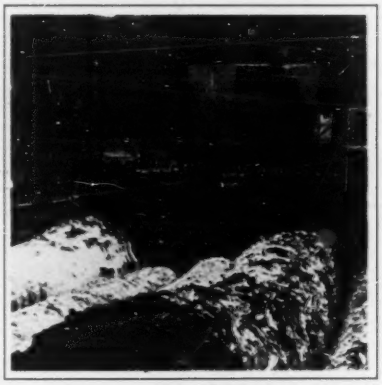
'A few simple rules' mark firm's work-bonus program

High labor costs and low productivity characterize 'overmature' lumber industry. An incentive program at WTD Industries, Portland, Ore., is helping to balance the equation profitably



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Hammermill purchase makes IP #1 paper firm

NEW YORK, N.Y.—International Paper Co. will move back into the top spot among U.S. paper producers when it completes its purchase of Hammermill Paper Co. IP lost the title to James River Co. last year when James River bought Crown Zellerbach Corp.

Hammermill, based in Erie, Pa., sought to merge with another paper company to thwart a takeover bid led by Paul Bilzerian. Bilzerian's group offered $52 a share—$900 million—for Hammermill. IP said it will pay $64.50 a share, or $1.1 billion, to buy the company, which had $1.88 billion in sales last year.

The Bilzerian group owns nearly 20% of Hammermill stock. Selling it to IP would yield a profit of about $60 million. Hammermill stock was selling for around $46 a share before the takeover bid.

IP specializes in commodity grades of paper and wood products. Buying Hammermill would give the company a major presence in the specialty paper market.

Profit margins on specialty papers, such as high-quality writing and printing papers, are much higher than on the packaging papers, business forms and similar grades which account for 80% of IP's output.

IP said it expects to complete the merger by October, if there are no problems with federal antitrust laws.

IP also said it will sell its headquarters building in New York City. The company will move its headquarters to suburban Westchester County, N.Y., and will relocate some business and staff units outside the New York area. Specific locations will be announced later this year. The company billed the moves as cost-cutting measures.

In other news of acquisitions in the forest industry, Louisiana-Pacific Corp. has signed a non-binding letter of intent to buy all of the California properties of Timber Realization Co. for $95 million. The purchase is subject to approval of L-P directors, Timber Realization holders, government approvals and a final purchase agreement. This process could be completed by October.

The property includes more than 100,000 acres of timberland, most of it in Mendocino County, and a sawmill at Calpella, Calif., with a capacity of 150,000 bd ft per shift. ■

U.S. forest industry results second quarter 1986 ($ millions)

Company	Sales	% change 1986/85	Earnings[1]	% change 1986/85
Boise Cascade	$945.1	-0.8	$31.33[3]	-1.1[2]
Champion Intl.	1,096.4	-31.4	50.46	-16.4
Georgia-Pacific	1,930.0	7.8	86.00[3]	28.3
Hammermill Paper	456.2	4.3	22.06[2]	103.9
International Paper	1,230.0	6.9	71.00	102.8
Louisiana-Pacific	394.0	14.2	24.54[2]	349.5[2]
Pope & Talbot	76.1	-10.7	3.62	97.3
Potlatch Corp.	249.9	0.5	19.43	84.3
Scott Paper	829.5	9.0	56.30	6.0
Southwest Forest	158.5	10.1	1.86	50.8
Temple-Inland	313.5	-4.0	19.30	-20.2
Weyerhaeuser	1,497.4	6.9	68.38	14.6
Willamette	309.8	1.9	19.34	9.6
Canadian companies (C$ millions)				
Abitibi-Price	701.7	5.9	24.60	15.5
B.C. Forest	324.2	11.8	20.00	181.7
Canfor Corp.	288.8	-6.1	11.20	n.m.[4]
Domtar Inc.	574.3	8.9	29.10	55.6
Great Lakes FP	164.6	12.1	5.56	n.m.[4]
MacMillan Bloedel	698.7	16.8	49.10	529.5

[1] Income after taxes from continuing operations, excluding most significant nonrecurring items.
[2] Boise Cascade: Includes $17.8 million in 1985 from mill sale. Hammermill. Includes pretax gain of $6.75 million from contract settlement. L-P: Includes $2.4-million pretax charge relating to sawmill sale and reserve loss on a venture capital investment.
[3] Change in accounting method on 1/1/86 reduced pension costs.
[4] Not meaningful—loss in 1985 quarter.

Second-quarter profits rose for many firms

SAN FRANCISCO, CALIF.—Many forest industry companies saw their profits go up during the second quarter, but weak lumber and plywood prices kept earnings below par. Prices for pulp and paper products increased somewhat, helping profits at integrated companies.

Canadian companies also reported a good second quarter, bolstered both by favorable economic conditions and a weak Canadian dollar.

Louisiana-Pacific Corp. reported its best quarterly sales ever, $394.1 million. Earnings of $24.5 million were the firm's third-highest quarterly results. Company chairman and president Harry Merlo said more efficient operations and cheaper raw materials led to the increased profits.

Merlo cited the cheaper U.S. dollar as a boost to pulp prices and exports. He noted that strong homebuilding activity should continue to help sales of building products.

MacMillan Bloedel's profits jumped in a spectacular fashion, quintupling from the 1985 quarter to C$49.1 million. The 1985 figure was 10 times better than MB did in 1984's second quarter. Strong sales, some higher prices, lower costs and a shift to higher-value products all contributed to the company's robust performance.

For Southwest Forest Industries, higher prices for pulp and linerboard and major productivity gains in building products created a major turnaround. The company lost more than $2.8 million on operations in 1985's second quarter; this year, operations earned more than $2.8 million.

Canfor Corp. also reported a profits turnaround. The company lost C$8.6 million in last year's second quarter, but earned C$11.2 million this year in the period. The higher profits came despite

a 6% decrease in sales, and resulted from lower costs and higher pulp and paper prices.

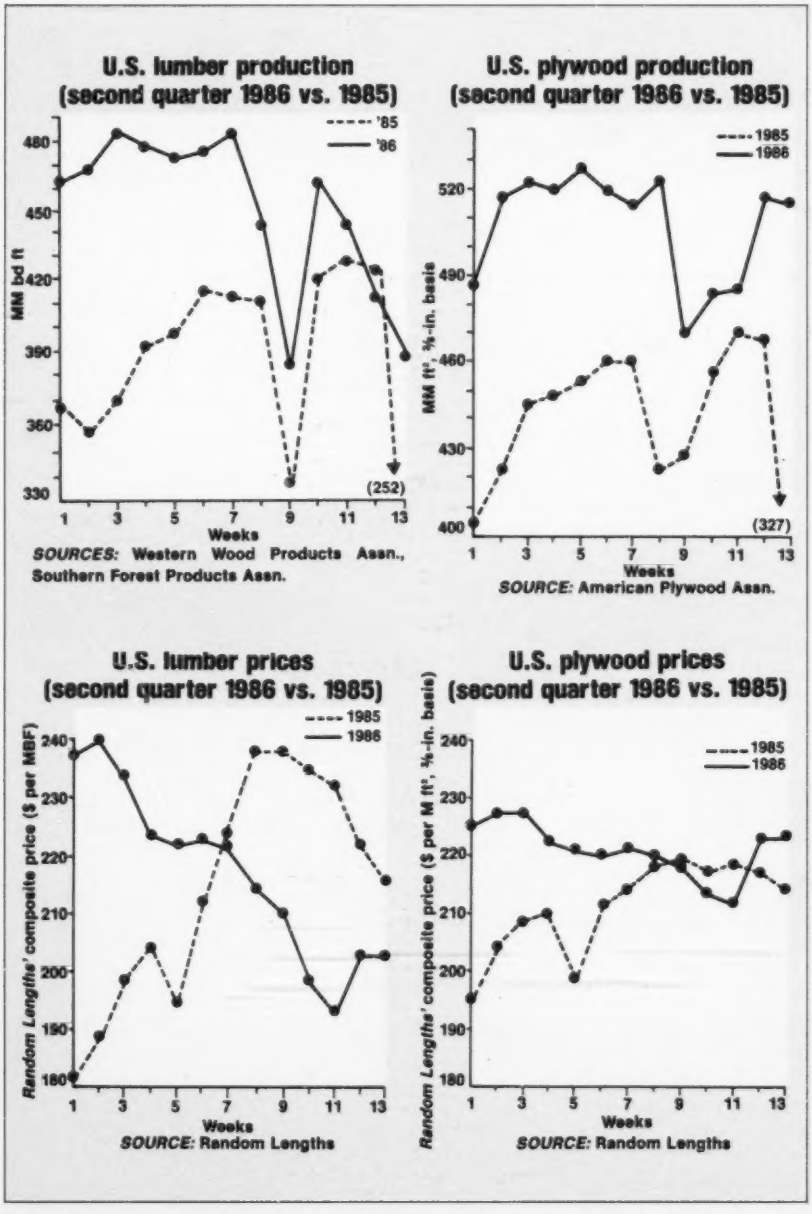
Georgia-Pacific's 28% gain in quarterly earnings "reflected increased demand for forest products, improved manufacturing efficiencies and product mix, and reduced operating costs," said company chairman and chief executive officer T. Marshall Hahn Jr. G-P earned $86 million during the quarter.

Potlatch Corp. officers also reported good news for the quarter. Although sales rose less than 1%, profits jumped 84% to $19.4 million. The company's "improved cost competitiveness" was responsible for the higher earnings, according to Potlatch chairman and chief executive officer Richard B. Madden.

The company's wood products group stayed out of the red for the second straight quarter. It earned $9.8 million, compared to a loss of $1.7 million for 1985's second quarter. Lower operating costs and improved demand boosted profits for both solid-wood and paper products operations, Madden observed. Chances for higher prices on the paper side make Madden optimistic about Potlatch's prospects for higher profits in the rest of 1986.

Temple-Inland Inc. saw sales and profits fall during the quarter, as compared to the same period last year. Prices for both paper and building products were too low, complained president and chief executive officer Clifford J. Grum. Cost-cutting programs did boost margins in all of the company's operations over those reported in the first quarter. Grum said he expects improving profits on the paper side, though soft wood-products prices may drag down results there.

The summer strike of lumber and plywood workers is likely to hurt third-quarter profits of affected companies. But firmer product prices which the strike brought on could help profits of producers which kept running. ■



Waferboard plants top capital-projects list

SAN FRANCISCO, CALIF.—Waferboard continues to be the star product in the forest industry, with new plants planned in both the United States and Canada.

U.S. Waferboard Co. of Vancouver, B.C., will build a $45-million waferboard plant in McCleary, Wash. The plant will create about 200 jobs in the economically depressed town of 1400.

Simpson Timber Co. closed its plywood plant there last year. The plywood operation had been the oldest continuously operating plant in the Northwest. Plans call for the plant to start up in about 18 months. Financing includes $10 million in industrial revenue bonds to be issued through the Port of Grays Harbor and a three-year deferral of state sales taxes on construction.

Normick Perron Inc. and two partners have formed a new company which will build a waferboard plant at Chambord, Que. The C$49-million plant will produce 250 million ft² a year. Normick Perron, a major forest products firm based in La Sarre, Que., will own 51% of the new company. Its partners are a federation of 6400 private woodlot owners in the Saguenay-Lac St.-Jean area and a group of seven forestry cooperatives in the same region. Chambord is about 270 miles north of Montreal. ■